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ABSTRACT

A two part experimental introductory college economics course is described. Data on the combination macroeconomics and microeconomics course have been collected over eight consecutive terms and are presented in nine chapters. Chapter I describes course goals as stimulation of student interest, teaching a few basic economic principles, helping students develop processes of orderly problem solving, and teaching students to evaluate qualitative and quantitative evidence. Chapter II presents catalogue descriptions of each course section and lists 17 course emphases, including urban economic problems, government and the economy, poverty and discrimination, and "Nixonomics." Chapter III discusses SAT scores, enrollment trends, majors, and student characteristics. Chapter IV describes course and instructor evaluation questionnaires. Chapter V explains the questions in the final exam "bank" and relates exam results. Chapter VI discusses the relation between instructor ratings and student performance on final exams. Chapter VII stresses the importance of practical teaching experience for graduate instructors. Chapter VIII discusses ways of attaining course objectives. Chapter IX presents concluding comments and outlines plans for a graduate seminar and student workbook. The bulk of the report contains appendices relating to course syllabi and homework problems and statistical tables of course enrollment, evaluation, exam scores, and student profiles. (Author/DB)

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Experimental Course Development in Introductory Economics at Indiana University

Phillip Saunders
Indiana University

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THE JOURNAL OF ECONOMIC EDUCATION

To promote the teaching and learning of economics in colleges, junior colleges and high schools by sharing knowledge of economic education.

Foreword

Several years ago the Joint Council—in cooperation with the American Economic Association's Committee on Economic Education—undertook a project to explore alternative approaches to teaching the college introductory economics course.

Although dissatisfaction with the introductory course has a long history, it was not the purpose of our project to come up with "the" introductory course. Rather, our goals were to develop alternative approaches that overburdened professors in the two- and four-year colleges might find more useful than their current offerings and to encourage others to improve and expand upon the Joint Council's efforts.

The following course syllabus is only one of several that the Joint Council will publish in the coming months. The Council is grateful to all those who participated in the project, and to The American Bankers Association and the Alfred P. Sloan Foundation for their generous support.

Arthur L. Welsh

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Experimental Course Development In Introductory Economics at Indiana University

Phillip Saunders

Introduction and Summary

One feature of the experimental work in introductory economics being conducted at Indiana University has been the compilation of a consistent set of comprehensive data over eight consecutive terms. In addition to describing our efforts, therefore, we can also present some quantitative evidence on several points of general interest that may transcend the details of the particular courses that we have been developing.

The first section of this report describes our new courses: E103—Introduction to Microeconomics, and E104—Introduction to Macroeconomics. The major goals of both of these courses are:

1. To stimulate in students an awareness of, and a continuing interest in, important problems of economic policy. The kind of policy problems one encounters daily in the newspapers and news magazines.
2. To give students a firm grasp of the *few* basic principles and analytical tools they need in order to think intelligently about economic problems. Where necessary, technical theoretical detail will be sacrificed in order to obtain proficiency in the use of the basic tool kit.
3. To help students to develop good method in thinking about economic problems. This involves specific attention to the process of orderly problem-solving, including the recognition of different values and the problem of conflicting goals.
4. To help students to learn to evaluate and use both qualitative and quantitative evidence when conflicting viewpoints and approaches are encountered.

To help to assess our effectiveness in achieving these goals we have collected data on enrollment trends and the characteristics of the students taking our introductory courses, and we have collected information from specially devised course and instructor evaluation forms and common final exams. Copies of course schedules, course syllabi, sample exam questions, and the course and instructor evaluation questionnaire used are provided in the appendices for those who are interested in examining these materials in detail.

Beyond helping us to assess our effectiveness in attaining specific course goals, our

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data also permit us to analyze the relation between instructor ratings and student performance and to assess the effectiveness of using graduate student instructors to teach introductory courses. These questions are discussed in the middle sections of this report, before a concluding section outlines how we plan to use the results we have obtained to date to improve our effectiveness in the future.

In briefest summary, our results indicate:

1. Enrollment has increased significantly in both courses. While considerably more students take E103 than E104, enrollments have been increasing faster in E104 than in E103.
2. Despite some slight trends toward more freshmen, more females, and more nonbusiness majors electing to take introductory economics, our courses are still predominately sophomore courses with a preponderance of business majors, most of whom are males, taking the courses on a required basis.
3. A university-wide trend of declining SAT scores has been reflected in the scores of the increasing number of students taking introductory economics; but university-wide trends toward higher course grades have not been reflected in introductory economics, where grades in both E103 and E104 are significantly lower than the cumulative grade point averages of the students completing these courses.
4. While a large number of our students agree that the subject matter of introductory economics "is important and relevant in today's world," it has proven extremely difficult to increase their reported "interest" in the subject matter of our introductory courses. Indeed, in a distressing number of cases their interest is lower at the end of the course than at the beginning. Maintaining and/or increasing interest has proven to be more of a problem in E103 than in E104, and regular faculty have been more successful in sustaining interest than have graduate student instructors.
5. Although our students average significantly better on selected exam questions than do students from other colleges and universities, some one-quarter to one-third of our students find it extremely difficult to master even the most basic ideas of introductory economics.
6. There is a considerable range in both the final exam performance and instructor ratings of students in different sections of our courses.
7. Using multiple regression analyses to hold other things constant, we have found that our students do significantly better on the final exam in both E103 and E104 if they are in sections that meet three times a week for 45 minutes rather than twice a week for 75 minutes.
8. Using multiple regression analyses to hold other things constant, we have also found a consistently positive and statistically significant association between various measures of overall instructor ratings and student performance on the common final exams in both E103 and E104.
9. We have been able to identify empirically seven specific instructor behaviors that are significantly associated with overall student ratings
10. We have found that both the instructor ratings and student exam performance of graduate student instructors improve with experience.

On balance there is considerable evidence indicating that our present system of meeting once before each term begins to discuss course goals, followed by one or two other meetings during the term to discuss teaching problems and the content of the common final exams, should be replaced with a formal graduate seminar on teaching introductory economics. How such a seminar would tie in with plans to develop special student "workbooks" in E103 and E104 and an attempt to arrange "block scheduling" of our introductory courses is explained in some detail in the concluding section of this report.

Course Descriptions and General Overview

Responding to the longstanding professional lament that the traditional two-semester principles course is "overcrowded," and utilizing the experience gained in an earlier experiment with a one-semester course at Carnegie-Mellon University,[1] a major overhaul of the introductory economics courses was begun at Indiana University in the fall term of the 1971-72 academic year. The numbers and titles of the beginning economics courses were changed from E201-E202—Principles of Economics I-II to E103—Introduction to Microeconomics and E104—Introduction to Macroeconomics. *Much* more than the course numbers and course titles were changed, however. We attempted to implement a whole new philosophy. Rather than encouraging students to memorize or master "principles" that "cover the field," there is now an emphasis on *introducing* students to economics as *a way of thinking*. We are trying to make sure that students can do a *few* things *well*, rather than trying to "cover the waterfront" at a more superficial level. The basic assumption is that no analytical concept, tool or model is done well unless a student can *use* it analytically in the different situations and different contexts that he or she is likely to encounter in his or her own experience, and in reading of current events in newspapers and magazines. The number of concepts that a student can develop to this degree of mastery in an introductory course is limited, so we are trying to concentrate our efforts on only the few most basic and most important analytical tools.

The E103 and E104 courses do *NOT* have to be taken in sequence. All sections in each course focus on a common, limited "core" of analytical tools and models. Students are then give the opportunity to apply these tools to a variety of real world policy problems. The first part of the final exam in each course is a common set of multiple-choice questions answered by all students in the course, and the second part of the final exam is a set of essay and/or multiple-choice questions designed by each instructor for only the students in his or her section of the course. We hope that his approach provides a basic foundation on which students taking futher work in economics can build, and also gives students taking no further work in economics some analytical tools and a way of thinking that they can *use*. We are trying to make the new courses more interesting, and (terrible cliché) more "relevant" than the old courses. While the analytical core provides unity, the variety of applications gives instructors and students with particular interests, tastes and talents considerable flexibility in "doing their own thing." Each instructor selects his or her own text and supplementary readings. But, as mentioned above, all cover the same limited analytical core that is tested on the common part of the final exam.

The current catalogue description of E103—Introduction to Microeconomics is:

> Scarcity, opportunity cost, competitive market pricing, and interdependence are introduced as a basic analytical core. Individual sections apply these tools to a variety of current economic policy problems such as poverty, pollution, excise taxes, rent controls and farm subsidies. Major applications for each section appear on the class schedule.

Application emphases offered in the class schedule so far have included:

Urban Economic Problems
Environmental Economic Problems
Government and the Economy
Capitalism vs. Communism
The Economics of Education
Poverty and Discrimination
Nutrition and the Consumer
Scarcity and Interdependence
Current Economic Problems (A variety of "smaller" applications such as campus parking; price floors such as minimum wage laws; price ceilings such as rent controls; the draft and the volunteer army; tax reform, including a negative income tax and a value added tax, etc.)

The current catalogue description of E104—Introduction to Macroeconomics is:

> Measuring and explaining total economic performance; money, and monetary and fiscal policy are introduced as a basic analytical core. Individual sections apply these tools to a variety of current economic policy problems such as inflation, unemployment, economic growth, and underdeveloped countries. Major applications for each section appear on the class schedule.

Application emphases offered in the class schedule so far have included:

Unemployment, Inflation, and Growth
Rich Nations and Poor Nations
Monetary and Fiscal Policy
Growth: Quantity, Quality, and Distribution
Incomes Policy: The 1970's
"Nixonomics" and the 1972 Elections
The End of Affluence
Current Economic Problems (A variety of "smaller" applications dealing with the economy as a whole, including disarmament, automation and productivity, gold and the balance of payments, etc.)

In order to provide a "menu" that offers choices not only for those with subject matter preferences in the applications areas, but also for those with time-of-day, number-of-meetings-a-week, and size-of-class preferences, we have arranged the schedule so that students can exercise options in all these areas. Large lecture classes (held in rooms seating from 120 to 360 students) are offered along with smaller classes of from 15 to 75 students each at a variety of times from 7:30 a.m. to 8:00 p.m. on both a three-times-a-week-for-45-minutes and a twice-a-week-for-75-minutes basis. Three meetings a week classes were originally offered on both a MWF and a TuThS basis, but TuThS classes have now disappeared from the schedule. Two meetings a week classes have been offered on both a M-W and Tu-Th basis. The class schedule also lists the name of the instructor assigned to teach each section. Both regular faculty members (RF) and graduate student Associate Instructors (AI) are used to teach the courses, but only regular faculty members are assigned the large lecture sections. Associate Instructors are usually assigned two sections of the same course and given complete responsibility for selecting their own subtitles, choosing their own textbooks and other reading material, preparing their own assignment sheets, and designing their own examinations. Copies of the Fall 1974 and Spring 1975 E103 and E104 schedules are attached as appendices I and II. Even though both courses are offered each term, and even though the courses do not have to be taken in sequence, most students who take both courses still take them in numerical order and more sections of E103 are offered in the fall term, and more sections of E104 are offered in the spring term of each year. Both courses are also offered during the two terms of summer school at I.U., but the number of options is usually restricted to one section of each course during the six-week summer term and two sections of each course during the eight-week summer term.

Given all the scheduling options provided by the "menu" during the regular academic year, our experience indicates that time-of-day and number-of-meetings-a-week considerations are still the most important variables in student section selection—they generally dislike early morning classes, and prefer three 45-minute meetings a week to two 75-minute meetings. There are significant differences in student preferences, however, and the whole purpose of the "menu plan" is to allow more scheduling on the basis of individual preferences.

Each instructor is required to give his or her students a course syllabus or assignment sheet on the first day of classes. Syllabuses for three different E103 classes, each with different subtitles, are shown in Appendices III, IV and V; and three different E104 syllabuses are shown in Appendices VI, VII and VIII. In general we have found it much easier to develop a meaningful variety of subtitles in E103 than in E104, and it seems that the basic nature of microeconomics lends itself better to our limited-core-with-a-variety-of-applications approach than does macroeconomics.

Given the change in course philosophy and the adoption of the "menu" plan, however, perhaps the single most important part of the changes in our introductory economics courses has been the development of a systematic evaluation effort based on analyses of: the number and type of students enrolling in introductory economics and the number of students electing to take further work in economics by becoming economics majors; student responses to specially constructed and administered course and instructor evaluation questionnaires; and student performance on the common part of the final exams.

The data we have collected so far show some signs of encouragement, but they also indicate that we still have a long way to go. In presenting the results of our efforts, an attempt will be made to be as specific, as concrete and as candid as possible in the hope that others who want to experiment in this area can benefit from our experience. Detailed data on enrollments, course and instructor evaluation results, and exam performance are presented so that others who want to try to duplicate or improve on our preliminary results will have some specific benchmarks for comparison.

Analysis of Enrollment Trends and Student Characteristics

Tables 1, 2 and 3 present the basic data with regard to the number of students enrolling in introductory economics courses and registering as economics majors in the College of Arts and Sciences since the fall term of 1971-72, when the E103 and E104 courses were introduced, compared to the two previous years of the old E201-E202 sequence. During the first four years of the experiment the total number of introductory economics students has increased by some 53 percent and the number of economics majors by almost 60 percent. These increases cannot be accounted for by a general increase in overall enrollments at I.U.'s Bloomington campus, since these figures have remained fairly stable. During the fall terms covered in Table 1, for example, the number of students enrolling in introductory economics has increased from 14.1 percent of the freshmen and sophomores on the Bloomington campus in 1971-72 to 19.8 percent in 1974-75. The comparable figures for spring semesters are 15.4 percent in 1971-72 and 18.7 percent in 1974-75; and for summer terms the figures go from 10.3 percent to 12.2 percent. Within the past year or so, however, there has been a nationwide trend toward increased enrollments in undergraduate economics courses, so it is difficult to say how much of the increased enrollment on our campus is due to our own efforts and how much is windfall gain due to other forces.

Not all the students enrolling in introductory econmics complete the course. Table 4 indicates that, over the eight regular academic-year terms that E103 and E104 have been in existence, some 11-12 percent of the 15,510 students enrolling in our introductory economics courses have either withdrawn before the end of the term or received a grade of Incomplete. The term-by-term breakdown of the E103 data in Table 5 and the E104 data in Table 6, however, indicates a sharp decline in the withdrawal and incomplete rate in the more recent terms; so the increase in the number of students *completing* E103 and E104 has gone up even faster than the initial enrollment figures in Tables 1 and 2 indicate.

The data in Table 5 and 6 also indicate that the biggest increases in enrollments have come in the "off seasons"—spring terms for E103 and fall terms for E104. Overall, however, more students still take E103 than E104; but enrollments and completions have been increasing faster in E104 than in E103.

SAT Scores

In terms of the scores shown in Table 4, the eight term totals indicate that the students completing E103 and E104 have had a mean total SAT score of roughly 1,000, with an overall mean of about 474 on the verbal SAT and an overall mean of about 526 on the math SAT. The SAT scores of the smaller number of students completing E104 have been slightly higher than those of the larger number of students completing E103. The term-by-term comparisons shown in Tables 5 and 6, however, indicate a steady decline in the mean scores on both the verbal SAT and the math SAT for students completing E103 and E104, so that the students completing E103 in 1974-75 had an overall mean SAT score of 983 compared to an overall mean of 1,017 for the students completing E103 in 1971-72; and the students completing E104 in 1974-75 had an overall mean SAT score of 990 compared to an overall mean of 1,027 for the students completing E104 in 1971-72. This decline in total SAT scores reflects general trends in the university where the mean SAT scores of the entering freshman class have declined from 1010 in the fall of 1971 to 966 in the fall of 1974.

Course Grades

Recent trends of "grade inflation" in the University are also reflected in the data in Tables 5 and 6, where the mean overall cumulative grade point average of the students completing introductory economics shows a fairly steady increase. But there has *not* been a similar trend in mean grades in the E103 and E104 courses. In every single term the mean grades in the introductory economics courses have been lower than the mean cumulative grade point average of the students completing E103 and E104, and the overall eight term totals shown in Table 4 indicate that E103 students with a mean cumulative grade point average of 2.72 have received mean course grades of 2.44; and E104 students with a mean cumulative grade point average of 2.74 have received mean course grades of 2.43. Whatever reasons account for the increases in enrollment in introductory economics courses at I.U., "easy" grading is not one of them. Indeed, studies at the university indicate that of all levels of undergraduate instruction the Economics Department deserves its widespread reputation of being one of the hardest grading departments in the College of Arts and Sciences.

Male Sex

Considerably more males than females take introductory economics at I.U., but the data in Table 4 indicate that over the last eight terms there has been a significant difference in the percentage of males completing E103 (69 percent) and E104 (74 percent). Generally a larger percentage of males takes E103 in the fall than in the spring, and the percentage of males in E104 tends to be higher in the spring than in the fall. The term-by-term data in Tables 5 and 6, however, do indicate that there was a significant increase in the overall combined percentage of females completing E103 and E104 in 1974-75 (32 percent) compared to 1973-74 (28 percent).

Required or Elective

Information on whether students completing E103 and E104 take these courses on a required or an elective basis is available only from the students who fill out the course and instructor evaluation form described below. Fortunately, the overall response rate of about 74 percent in both courses is fairly high, so the data in Tables 4, 5 and 6 are reasonably inclusive. Overall, the percentage of students completing introductory economics who are required to take the course has been higher in E104 (81 percent) than in E103 (74 percent), but on a year-by-year basis there is a tendency for the percentage of students completing the course on a required basis to increase in E103 and to decrease in E104.

School of Major Enrollment and Class Standing

Over the eight regular terms that E103 and E104 have been in existence, there has been an increasing tendency for freshmen, most of whom are in the University Division which handles students prior to their declaring a major course of study, to take introductory economics. Since economics has a general reputation of being rather "tough," however, the emerging pattern appears to be for more students to begin, usually with E103 rather than E104, in the spring term of the freshman year and then take a second semester in the fall term of the sophomore year after many of the students have transferred from the University Division to the School of Business which requires a second term of introductory economics of all majors.

Within this framework, then, our introductory economics courses are still predominately sophomore courses with a preponderance of business majors, most of whom are males, taking the courses on a required basis. A university-wide trend of declining SAT scores has been reflected in the scores of the increasing number of students taking introductory economics; but university-wide trends toward higher course grades have not been reflected in introductory economics, where grades in both E103 and E104 are significantly lower than the cumulative grade point averages of the students completing these courses.

Course and Instructor Evaluation Results

We have prepared a special Course and Instructor Evaluation Questionnaire to help us to evaluate our effectiveness in E103 and E104. The same set of 40 questions is used in each course, but the instruments are printed separately, the only difference being the course number shown on the first page. A copy of this instrument is attached as Appendix IX. The first six questions deal with background information such as the respondents' knowledge of the section subtitle, expected course grade, attitude toward economics before and after the course, etc. Questions 7-25 deal with various instructor behaviors, and questions 26 and 27 are overall assessments of instructor performance in comparison to that of other introductory course instructors at I.U. (26) and in terms of how the student would react to the opportunity to take the same instructor again in another course (27). Question 28, like the last question (40), is an open-ended question which solicits a response that cannot be coded or machine-graded. Questions 29-39 deal with various aspects of the course: subject matter, organization, class size, textbook and other required readings.

In selecting questions for the instructor evaluation part of the questionnaire, we consciously sought to omit questions that deal only with popularity or personality, and we tried to include only questions that psychological theory indicates are associated with student learning.[2] By limiting questions to various aspects of observable instructor behavior, we hoped that low ratings might give an instructor specific information on how he or she might improve his or her performance.

In designing our evaluation questionnaire we also avoided a format that permits students to simply mark a standard response on a single sheet. We have tried to force students to read and answer each item separately, and space is provided for written comments on each question.

It should also be noted that our questionnaires are administered uniformly by a trained "outsider" during part of a regular class meeting during the last two weeks of classes when the instructor being evaluated is *not* in the room. Great efforts are made to get a high response rate and to encourage complete candor in order to overcome any "halo" effect that might occur when only a few students complete and hand in an evaluation form to their own instructor. The instructions on the questionnaire itself, which are read aloud by the outside administrator, also encourage complete candor.

The response rate on our evaluation questionnaire to date has been very good with 5,823 (74.4 percent) of the 7,826 students completing E103 and 4,308 (73.7 percent) of the 5,848 students completing E104 handing in questionnaires to the "outside" evaluator. As indicated in Table 7 for E103 and Table 8 for E104, the students handing in completed questionnaires have higher SAT scores, higher cumulative grade point averages, and eventually received higher course grades than the students who completed the course but did not fill out the evaluation questionnaire. Since evidence discussed in more detail below indicates that expected course grades are positively associated with overall instructor evaluations, the fact that the questionnaire respondents actually received higher course grades than the nonrespondents may tend to bias our evaluation results upward slightly compared to the results that would have been obtained with a 100 percent sample. Tables 7 and 8 also indicate, however, that the mean course grades actually received by the questionnaire respondents turned out to be lower than their mean response to question 3 on the "grade you now reasonably expect to receive in this course."

In the hope that other schools might like to try using our evaluation questionnaire (or at least some of the questions) for benchmark purposes, Tables 9 and 10 provide a detailed summary of the results we have received to date.[3] A mean rating on each question of our questionnaire is available for each term that a particular Associate Instructor (AI) or a particular regular faculty member (RF) has taught E103 or E104.[4] On each question we now have 41 separate ratings for 27 different AI's and 45 separate ratings for 20 different RF in E103, and 37 separate ratings for 26 different AI's and 38 separate ratings for 15 different RF in E104. Twenty-three AI's and nine RF have ratings in both courses.

Without commenting extensively on all the details contained in Tables 9 and 10 at this point, the following general patterns emerge from an analysis of these questionnaire results:

1. On the instructor evaluation questions 7-27, the overall means weighted by the number of students rating each instructor are consistently more favorable than the overall unweighted means in both E103 and E104, indicating that instructors receiving good ratings tend to attract larger numbers of students and/or are assigned to teach the larger sections.

2. Both the weighted and unweighted means on most questions are higher in E104 than in E103, indicating that the macroeconomics course is more favorably received than the microeconomics course. In this connection, however, it must be recalled that a smaller number of students take E104 than E103 and some initial self-selections may be involved. It should also be kept in mind that the instructor pool teaching the different courses is not identical.

3. In both E103 and E104 means are higher for RF than for AI's on the questions associated with the overall instructor rating and on the questions associated with course content and organization.[5]

4. On question 26 ("In terms of overall teaching effectiveness, and compared to other *introductory* course instructors you have had at I.U., how would you rate your instructor in this course?"), over 75 percent of the means in E103 and over 90 percent of the means in E104 have been over the "Average" value of 2.0; and over 25 percent of the means in E103 and over 50 percent of the means in E104 have been over the "Above average" value of 3.0. Despite the rather high overall means on this question, however, there is still a rather wide range of individual mean ratings (3.81-0.93), indicating that students do discriminate between different instructors.

Common Final Exam Results

The questions used on the common multiple-choice part of the final exams in E103 and E104 are carefully selected by a faculty member or a graduate student who is *not* teaching the course from a specially prepared "bank" of questions that have been tested for their psychometric properties and for the types of thinking required to answer them correctly.

There are criticisms of the multiple-choice method of examination. We have studied these criticisms carefully, and to the greatest extent humanly possible we have sought to overcome them since much of a person's use of economics after he or she leaves college does fit into a framework similar to a multiple-choice format. In newspaper or television reports, for example, it is common to describe a particular economic situation or policy proposal followed by several comments or criticisms by different people or organizations. Good multiple-choice questions thus have a unique advantage in testing whether or not an individual can use economic reasoning to sort out the most sensible or least plausible interpretations or conclusions in such situations. And, in keeping with our overall course objectives, most of the questions in our final exam "bank" are designed to measure higher levels of cognitive learning such as interpretation, application, analysis, synthesis, and evaluation in addition to lower levels of cognitive learning such as memory, recall, and recognition.

Great pains are taken to keep our final exam question bank secure. While it is clear what types of economic knowledge will be tested, neither instructors nor students know the specific questions that will be used on any particular exam in advance. The typical procedure is to circulate a list of 50-75 previously selected questions to each instructor, who is given the power to veto any question that he or she thinks is unfair to his or her students. After the vetoes are in, the faculty member or graduate student designated constructs the exam from the questions that have been "cleared." After some experimentation we have settled on a format of 25, four-option multiple-choice questions that students are allowed up to one hour to answer.[6]

As particular questions are used, data are collected on student performance. In general, a question will not be kept in the final exam bank for possible reuse unless it meets three tests: (1) all options must draw some responses (ideally, responses on the "distractors" or incorrect options should be distributed equally); (2) the percentage of correct responses should be between 35 and 85 (questions falling outside this range are either too difficult or too easy to discriminate effectively); and (3) the correlation coefficient between the students answering an individual item correctly and their total test score must be at least .30 (we want to avoid questions that are answered correctly by large numbers of students with low exam scores and questions that are answered incorrectly by large numbers of students with high exam scores). Obviously, however, the correlation between a correct response on a particular question and the overall test score depends on the other questions on the test; and if a test is constructed of only questions that correlate above .30 on previous exams, some of these questions may well fall below this level on the composite exam.[7] In addition to using judgment in this area, the general rules are also usually waived for a few questions on each exam so that we have a check on some basic definitions that one would hope "everyone" completing an introductory course would know. These questions are usually limited to two or three in number and they are usually put first on the exam so that the students can get off to a good start and so that we can see if the students really understand the meaning of the basic terms used in the application, interpretation, and evaluation questions on the exam. Despite these efforts, however, we have not yet been able to devise a question that 100 percent of the students answer correctly on the final exam.[8]

Appendix X shows a sample of 20 "typical" E103 final exam questions and Appendix XI shows a sample of 20 "typical" E104 final exam questions, along with the most recent performance data of I.U. students on these questions.[9] An examination of these questions indicates that, in most cases, a student cannot correctly figure out the correct answer from memory or recall alone. We are constantly trying to develop and use questions that require students to *use* the basic ideas of introductory economics in the kinds of situations they are likely to encounter in the "real world" outside the classroom.

Table 11 shows the array of mean scores and Kuder-Richardson reliability coefficients on each of the eight exams actually used in E103, and Table 12 shows the same information for the eight exams used in E104. The overall course mean on our different exams has ranged from 63.12 to 74.66 percent. In each term, however, there is a disappointingly wide range in the mean scores of the students of different instructors around the overall course mean. With one exception, the difference between the mean scores of the lowest group and the highest group has never been less than 9.87 percent, and it has gone as high as 18.99 percent. Factors accounting for some of this variability in student test performance are discussed below.

With regard to test reliability, the Kuder-Richardson coefficients for our common multiple-choice final exams have ranged form .65 to .78, which is fairly high for 25-item, four-option multiple-choice tests.[10] Common ways of improving test reliability are to increase the number of items on a test, increase the number of options for each question, and/or make the average level of item difficulty approach 50 percent; but the constraints under which we are working make it difficult for us to do any of these things. Given our desire to use a large number of "realistic" and "thinking" questions with fairly long items and options, and the necessity of leaving part of the final exam period for individual instructors' exams, we have decided not to use more than 25 questions on the common part of the final; and on most questions we have not been able to come up with a reasonably plausible fifth option that is likely to attract much of a response without resorting to such unacceptable testing devices as "all of the above," "none of the above," "two of the above," etc. Finally, we feel that an average item difficulty of 50 percent makes a test too difficult for grading purposes, even though this might help to increase the reliability coefficient.

Since the individual questions and the overall test difficulty differ on the common final exams we have used in various terms, the raw percentage scores for each student are converted to standardized or scaled "t" scores each term. The "t" distribution always has a mean of 50 and a standard deviation of 10, and this permits us to pool the data for each of the eight E103 exams and the data for each of the eight E104 exams. These pooled data have then been used in regression analyses to determine the factors that are significantly associated with student performance on the common multiple-choice part of our final exams in each course.[11]

Table 13 shows the results of five E103 regressions with the scaled multiple-choice final exam score as the dependent variable, and Table 14 shows the results of the same five regressions in E104. Many previous studies have indicated that total SAT scores and male sex are positively and significantly associated with exam performance in introductory economics, so we included these variables in our regressions. In addition we included sets of dummy variables on the number and time of class meetings, students' class standing, and students' school of major enrollment. We also included information taken from the responses on our course and instructor evaluation form. In particular, we used the responses to question 2 on whether the course was taken on a required or an elective basis, question 4 on the student's attitude toward the subject matter of the course at the beginning of the course, and question 26 asking the student to compare the overall teaching effectiveness of his introductory economics instructor with that of other introductory course instructors at I.U.

The main thrust of our regression analyses was to use most of the variables for control purposes so that we might add some additional insight to previous discussions on the use of graduate student instructors and the association, if any, between student ratings of instructors and student learning as measured by exam performance. In the process, however, one major point of interest emerged which has not been discussed before.

Tables 13 and 14 indicate that, holding other things constant, students in both E103 and E104 do significantly better on the common part of the final exam if they are in sections that meet three times a week for 45 minutes rather than twice a week for 75 minutes. Economists, ingrained with the basic notion of diminishing marginal returns, may not find this result intuitively surprising; but it is interesting to have it empirically verified. It is not clear why the size of the coefficient for this variable is larger in E104 than in E103, however, and it remains to be seen if some instructors and students are willing to sacrifice the scheduling convenience of two-classes-a-week sections in exchange for the greater amount of learning that apparently occurs in three-classes-a-week sections.

The Relation Between Instructor Ratings and Student Performance on Common Final Exams

The relation, if any, between student evaluations of teaching and student learning has received considerable attention in recent years. The entire Fall 1973 issue of the *Journal of Economic Education* was devoted to various aspects of this topic, including a summary of the extensive bibliographic review of Costin, Greenough and Menges.[12] Compared to previous studies in this area, which usually employ data collected during only one term and/or use unweighted mean values rather than individual student values, the data we have collected in E103 and E104 offer the advantages of extended coverage over eight terms and detailed information that makes it possible to use the individual student as the unit of observation and to control for a variety of variables not included in most previous studies.

The first regression in Tables 13 and 14 uses the individual student's response to question 26 on the overall teaching effectiveness of his or her instructor as the independent variable. Holding other things constant, our results indicate that a 1-point difference in a student's overall rating of his or her instructor is positively and significantly associated with a difference of +.96 *scaled* point on E103 finals and a difference of +.69 *scaled* point on E104 finals.

Since any particular instructor receives a variety of ratings from individaul students in his or her class, the second regression in Tables 13 and 14 uses *weighted* section mean ratings as the independent variable.[13] Holding other things constant, our results indicate that being a student in a section taught by an instructor with a 1-point difference in his or her overall weighted mean rating is positively and significantly associated with a difference of +1.35 *scaled* point on E103 finals and a difference of +.76 *scaled* point on E104 finals.

Finally, to test the impact of being a student in a section taught by an instructor with a particularly "high" or a particularly "low" mean rating, the last three regressions in Tables 13 and 14 indicate that:

1. Compared to being in a section taught by an instructor with an overall mean rating of 2.99 or lower, and holding other things constant, being in a section taught by an instructor with an overall mean rating of 3.00 or greater is positively and significantly associated with a difference of +1.39 *scaled* point on E103 finals and a difference of +.88 *scaled* point on E104 finals.

2. Compared to being in a section that is taught by an instructor with an overall mean rating of 2.01 or higher, and holding other things constant, being in a section taught by an instructor with an overall mean rating of 2.00 or lower is negatively and significantly associated with a difference of -1.07 *scaled* point on E103 finals. It is also associated with a difference of -1.10 *scaled* point on E104 finals, but this difference is not statistically significant at the .05 level.[14]

3. Compared to being in a section that is taught by an instructor with an overall mean rating between 2.01 and 2.99, and holding other things constant:

   a. being in a section that is taught by an instructor with an overall mean rating of 3.00 or greater is positively and significantly associated with a difference of +1.30

scaled point on E103 finals and a difference of +.80 *scaled* point on E104 finals.

b. being in a section that is taught by an instructor with an overall mean rating of 2.00 or lower is negatively associated with a difference of −.47 *scaled* point on E103 finals and a difference of −.66 *scaled* point on E104 finals, but neither of these negative associations is statistically significant at the .05 level.[15]

Assuming for the moment that one accepts this evidence of the relationship between instructor ratings and student exam performance, how might one go about improving his or her teaching effectiveness? As mentioned in footnote 3, our factor analyses indicate that the instructor behaviors that are associated with the overall rating on question 26 are:

Question 7 The instructor seemed very enthusiastic about teaching this course.
Question 9 The instructor made the objectives and purposes of the course and individual assignments very clear. I always knew that was expected of me.
Question 10 The homework, exams and quizzes seemed clearly aimed at major learning objectives, and did not get bogged down in trivial points or minor details.
Question 13 The feedback on homework, exams and quizzes was very good, and enabled me to understand clearly how well I was doing in the course.
Question 14 The instructor took his teaching seriously and was always well prepared for regular class meetings.
Question 17 The instructor's voice and speaking ability made it easy to understand what was being said in class.
Question 20 In explaining difficult points, the instructor was able to go beyond the textbook and supply useful examples and applications

With the possible exception of instructor enthusiasm, it is interesting to note that none of these questions deal with "personality" or "popularity" and that all deal with behaviors that can be modified by instructor effort and/or training. If instructors want to take their teaching seriously, it appears that the potential for improving their performance and their ratings is within their control.

Much has been written about the relation between grades and/or expected grades and instructor ratings, but the results have been mixed. In reviewing these results (particularly the work of Costin, Greenough and Menges, Kelley, Mirus, and Soper) Henry Villard concluded that when student evaluations are simply used informally to improve instruction on an individual basis there is not much relation between grades and ratings; but when student evaluations are used formally to determine faculty rewards, a positive and significant relationship develops. He thus offered *Villards First Law:* "The more formal the use made of SET [Student Evaluation of Teaching] scores, the more rapidly will grades drift upward."[16]

As indicated above, there is not yet any evidence of any widespread grade inflation in our E103 or E104 courses, but we did run regressions with the data from each course to see if individual students' expected grades were associated with their ratings of their instructors. Table 15 shows the results of these regressions, which indicate that for an individual student a 1-point difference in expected grade is positively and significantly associated with a difference of +.31 point in the rating of his or her instructor in E103 and a difference of +.28 point in E104.

We have not yet done an analysis of the relations between expected grades and instructor ratings using section means rather than individual student data; but if one is concerned about the possibility of instructors attempting to improve their ratings by manipulating their students' grade expectations rather than their own teaching performance, at least two remedies are available. Soper suggests requiring that "additional information (such as grade distributions) be acquired and watched if SET's are to be used."[17] Another possiblity is to use only questions on particular instructor behaviors such as the ones indicated above, and avoid a single overall summary instructor evaluation question, since it seems likely that grade expectations would have less influence on the evaluation of particular behaviors than they would on a single overall evaluation question.

The Use of Graduate Student Instructors

The increasing enrollments in our introductory economics courses have led to an increasing use of graduate student Associate Instructors. In the fall of 1971-72 some 37 percent of the students completing E103 and E104 were taught by AI's. By the spring of 1974-75 the figure had increased to 62 percent. The number of AI's used has increased from seven in the fall of 71-72 to 12 in the spring of 1974-75. Over the entire eight terms that the new courses have been in existence, 49 percent of the students completing E103 and 52 percent of the students completing E104 have been taught by 30 different AI's. An AI usually begins by teaching two sections of E103 in the fall term and then two sections of E104 in the spring term. Most AI's teach for two years, and in the second year a few have "specialized" in two sections of E103 or two sections of E104 in both terms rather than change courses during the year.

An earlier study with a one-semester course at Carnegie-Mellon University found that holding other things constant, and compared to the students of regular faculty instructors, the students of graduate student instructors did not differ significantly on final exam performance; did receive significantly higher course grades; and did rate their instructors significantly lower on an overall evaluation question similar to No. 26 on the I.U. questionnaire shown in Appendix IX.[18]

To test the generalizibility of these findings to the I.U. situation, a dummy variable (Taught by AI = 1, taught by RF = 0) was added to all the regression equations shown in Tables 13, 14 and 15, and this variable was also included in similar regressions not shown but available on request with individual students' expected course grade and actual course grade used as dependent variables. The I.U. results indicate that, holding other things constant, and compared to the students of regular faculty instructors, the students of AI's:

1. scored slightly lower (between −.15 and −.70 *scaled* point, depending on which regression model shown in Table 13 was used) on the common final exams in E103, but the differences were not statistically significant in four out of the five regressions.[19]

2. scored slightly higher (between +.60 and +.93 *scaled* point, depending on which regression model shown in Table 14 was used) on the common final exams in E104, and this difference was statistically significant in four out of the five regressions.[20]

3. rated their instructors significantly lower (at the .01 level) on instructor evaluation question 26 by −.52 point in E103 and by −.48 point in E104.

4. reported significantly higher (at the .01 level) expected course grades of +.11 point in E103 and +.21 point in E104.

5. actually received significantly higher (at the .01 level) course grades of +.08 point in E103 and +.19 point in E104.

With the exception of the final exam performance in E104, these results are consistent with the Carnegie results. Introductory economics students apparently do tend to rate graduate students lower than regular faculty members on instructor evaluation questions, despite the fact that graduate students apparently do tend to give slightly higher course grades.

Since most AI's start teaching in E103 and then move to E104, the I.U. results are also consistent with the notion that the teaching ability of AI's (as measured by the exam performance of their students) increases with experience. A detailed examination of the student ratings of individual AI's on question 26 also supports this notion.

Compared to their rating the first time they taught, the rating of individual AI's on question 26 increased the second time they taught for 18 of the 24 different AI's who have taught more than one term so far. For the AI's continuing to teach more than two semesters, the ratings continued to increase in 10 of 13 cases.[21] These facts help to explain the findings noted earlier that mean instructor ratings tend to be higher in E104 than in E103.

In sum, the evidence in this section and the preceeding section indicates that, if properly focused in particular areas, there is likely to be a high payoff for more attention to a formal instructor training program in our introductory economics courses, particularly if we can find ways of giving new AI's some practical experience before they start their first regular teaching assignment.

Attaining Specific Course Objectives

As mentioned in the Introdution and stated on the detailed course syllabuses shown in Appendices III and VI, the major goals of both our E103 and E104 courses are:

1. To stimulate in students an awareness of, and a continuing interest in, important problems of economic policy. The kind of policy problems one encounters daily in the newspapers and news magazines.
2. To give students a firm grasp of the *few* basic principles and analytical tools they need in order to think intelligently about economic problems. Where necessary, technical theoretical detail will be sacrificed in order to obtain proficiency in the use of the basic tool kit.
3. To help students to develop good method in thinking about economic problems. This involves specific attention to the process of orderly problem-solving, including the recognition of different values and the problem of conflicting goals.
4. To help students to learn to evaluate and use both qualitative and quantitative evidence when conflicting view points and approaches are encountered.

In assessing our effectiveness in achieving these goals to date we have the enrollment, student questionnaire, and final exam data presented above plus some more intuitive observations obtained over the past four years.

Interest in Economics

With regard to the first goal, the increasing enrollments in E104 relative to E103 indicate that we may be encouraging a larger proportion of students to go beyond their first semester of introductory economics, and the fact that the E104 students have slightly higher SAT scores and cumulative grade point averages than the E103 students indicates that we may be encouraging the slightly "better" students to continue. The increase in the number of economics majors is also encouraging. We still have considerably fewer students taking E104 than E103, however, and, as indicated previously, it is not clear how much of the increase in economics majors is due to our own efforts in introductory economics and how much is due to nationwide trends. The detailed questionnaire results shown in Tables 9 and 10 also indicate that we have considerable room for improvement with regard to increasing student interest in introductory economics.

As shown in Table 9, in E103 the overall, 8-term, weighted mean response on question 5, "attitude toward the subject matter of the course, now, *at the end of the semester*," is actually *lower* than the overall, 8-term, weighted mean response on question 4, "attitude toward the subject matter of this course *at the beginning of the semester*." Most of the decline in interest in E103 is among students taught by AI's rather than RF.[22]

As shown in Table 10, in E104 there is a tiny (.01) increase in the overall, 8-term, weighted mean response between questions 4 and 5, and the increase is larger among students taught by AI's rather than RF, which is again consistent with the notion that the teaching performance of AI's improves with experience.[23]

Clearly we have to devote more effort to arousing student interest, if we want to achieve this particular course goal.[24]

If we focus on the "awareness of" rather than the "interest" part of our first goal, the results are more encouraging. On question 29, "The subject matter of this course is important and relevant in today's world," the overall, 8-term, weighted mean responses of 3.31 in E103 and 3.49 in E104 are both between the response for "agree" (3.0) and "strongly agree" (4.0). Again the responses from the students of regular faculty members are significantly higher than the responses from the students of AI's on this question in both courses.

Finally, if we focus on the "continuing" part of the first objective and look at the student responses to question 37, "As a result of my experience in this course, I would *like* to take additional courses in economics," considerable room for improvement is again indicated. The overall, 8-term, weighted mean responses fall only slightly above the value of 2.0 for "neither agree or disagree," and the slightly higher value in E103 (2.16) compared to E104 (2.12) indicates that the desire for advanced work beyond the second semester of introductory economics is not particularly strong.[25]

Grasp of a Few Basic Principles and Analytical Tools

The main test of our success in achieving the second course goal rests on an interpretation of our students' performance on the multiple-choice questions on the common final exams. Since these questions have not been given on a before-and-after basis, and since we do not yet have any data from other schools on how students in other introductory courses perform on most of these questions, our interpretation must be somewhat more subjective than we would like. Seven of the questions shown in Appendix X and XI were taken, with permission, from the Test of Understanding in College Economics, however, and the postnorm data on the TUCE do provide some benchmarks on these questions along with eight other questions from the TUCE which have also been used on our final exams but which are not shown in the Appendices.

If we compare the performance of I.U. students with the performance of the TUCE postnorm group on these 15 questions, the results indicate that the I.U. students scored higher on 12 questions, the same on one question, 1 percent lower on one question and 3 percent lower on one question. Overall, on all 15 questions, the TUCE postnorm group had a mean response rate of 57.93 percent correct and the I.U. students had a mean response rate of 67.00 percent correct.[26]

The quality of the schools included in the TUCE postnorm group makes it unlikely that the superior performance of the I.U. students on these questions is due to any initial advantage in scholastic aptitude; and, while we do not have any pre- and postcourse comparisons, our experience with a credit-by exam policy initiated in January 1973 indicates that it is even more unlikely that the superior performance of the I.U. students can be explained by a high initial knowledge of the type of economics measured by our final exam questions.

Prior to course registration in each semester since the spring term of the 1972-73 school year, a general announcement has been published indicating that "Students who have had a separate course in economics in high school, or who on the basis of other study, want to try to get credit for either E103 or E104 on the basis of this experience may do so by taking a special three-hour examination." As shown in Table 1 above, a very small number of students have taken advantage of this opportunity to test out of E103 or E104, and only 33 percent of this *self-selected* group has actually passed the exam. The exam for credit consists of two parts. The first part is the common 25-item multiple-choice part of the preceding semester's final exam. A student must get 17 of these questions right (68 percent) in order to take the second essay part of the exam. Only two of the 26 students who have passed the multiple-choice hurdle have failed to receive credit on the basis of their essay answers. The mean score of the 46 students who have failed the multiple-choice part of the credit exams has been 11.68 or 46.72 percent. As weak and as indirect as this evidence is, it does indicate that the initial performance of our regular students would likely be significantly lower than the final exam results we have obtained if they had been given the same set of questions at the beginning of their introductory economics courses.

Beyond this evidence, one can look at the performance data shown in Appendices X and XI and draw his or her own conclusions on how successful we have been in giving our students an understanding of the basic tools of introductory economic analysis. Regardless of what other students might do, and regardless of how well our students might have done on these questions without a course in economics, the data in the appendices indicate that there is still considerable room for improvement in the overall average of final exam performance. Indeed, the data in Tables 11 and 12 indicate that we could get an overall improvement of well over 10 percent in mean final exam scores if we could raise the mean performance of the students of all instructors up to the mean performance of the students of the top instructor each term.

To cite only a few examples of how much room for improvement still remains on very basic concepts, the answers to questions 11 and 12 in Appendix X indicate that only some 63-72 percent of our students can distinguish between a change in "demand" due to a change in underlying conditions and a change in "the quantity demanded" due to a change in price. Despite our attempts to emphasize only the total revenue test of price elasticity of demand and play down the elaborate calculation of elasticity coefficients, questions 18, 19 and 20 in Appendix X indicate that a considerable percentage of our students still can't apply this basic concept. In Appendix XI, question 2 indicates that less than 75 percent of our students can recognize the most common definition of the money supply; and questions 11 and 12 indicate that only 53-60 percent of our students can apply the notion that the fiscal impact of a government deficit depends on the rate of overall economic activity.

A fair conclusion with respect to our second course goal might be that so far we have done better than on our first goal, but there is still no room for complacency. This may also be another way of saying that many of the students taking our courses find it difficult to master some of the most basic ideas of introductory economics; and we may be kidding outselves if we push on into more esoteric areas without first making sure that our students understand the fundamentals.[27]

Process of Orderly Problem-Solving

Achievement of the third course goal is difficult to measure with multiple-choice questions, and we have devised no systematic way of analyzing large numbers of students' essay answers to date; but most of our instructors feel that students have great difficulty in learning how to work their way systematically through "messy" policy problems. They tend to intermix analysis and values, and often get carried away and forget to apply their economic tools in "hot" areas such as pollution, poverty, deficit financing, etc.

Taking refuge in Browning's observation that "a man's reach should exceed his grasp, or what's a heaven for?" we hope to keep plugging away; and, as discussed in more detail below, we are planning to devote more effort to developing homework problems and multiple-choice questions that force students to employ the type of thinking embodied in our third course goal. Examples of the type of questions of which we would like to develop a larger number are 13 and 16 in Appendix X, and 19 in Appendix XI; and we would hope to reduce the percentage of students choosing alternatives like "D" in question 10 of Appendix X.

Evaluate Conflicting Viewpoints

As indicated by questions 3 and 13 in Appendix X and questions 5, 14, 17 and 10 in Appendix XI, multiple-choice questions expressing different points of view and different economic reasoning can be developed at various levels of difficulty. But, as is the case with respect to our third course goal, we still do not have a sufficiently large number of good questions to measure our performance in this area adequately. Our intuitive impressions, however, are similar to those reported above; and we plan to devote more effort to developing a larger number of good questions in this area.

Concluding Comments and Plans for the Future

If we are to make further progress in improving our performance and evaluating our success in achieving our goals for E103 and E 104, it seems clear that we must devote more formal attention to these tasks than has been done to date.

Our present system of one meeting before each semester to discuss course goals and section subtitles with new instructors, followed by one or two other meetings to discuss teaching problems and the content of the common final exams, should be replaced with a formal graduate seminar on teaching introductory economics. We hope that faculty members as well as graduate students would find it useful to participate in this seminar.

Our present system of each instructor developing or taking his own homework problems and exam questions from commercially developed materials that do not always fit the nature of our courses and "sharing" them with other instructors on an informal basis should also be replaced with a more formally assembled "bank" of homework problems and exam questions similar to, but more variegated than, the "bank" of questions we have assembled for final exam purposes. Once assembled, a selection of these materials should be duplicated and made available to students each semester, in the form of an E103 and an E104 "workbook" that could be sold through the I.U. bookstore to offset duplicating costs.

The availability of such a workbook would enable us to communicate to both instructors and students specific course objectives and concrete examples of the types of learning to be emphasized in the common "core" of our courses much more effectively than is presently the case.

In selecting Associate Instructors, attention should be paid to interest in and enthusiasm for teaching as well as performance in graduate courses and financial need. We should also explore the possibilities of "block scheduling" and student pretesting on the first day of class in order to improve our understanding of students' initial abilities and interest and to improve communication about the different "applications" emphases of our various sections.

We have initiated discussions with the scheduling authorities to see if it would be possible to schedule all sections of E103 and E 104 at one of four times. (Based on the exam results discussed above, hopefully, but not necessarily, all on a MWF basis.) On the first day of class at each time, all the students, regardless of which section they were enrolled in at that time, would meet in the university auditorium to hear a *brief* explanation of our "common-core-with-a-variety-of-applications" approach and to take a pretest that would cover initial interests and attitudes as well as economic knowledge. On the second day of class all the students would again meet in the auditorium, at which time each instructor teaching at that hour would make a *brief* presentation on how he or she planned to run their section of the course. Students scoring above a predetermined cut-off on the pretest of economic knowledge would also be informed of the possibility of taking an additional essay exam for ungraded credit in the course and/or enrolling in special honors sections already in existence. Each student would then pick up the assignment sheet for the section in which he or she planned to enroll on a permanent basis and begin to attend class in the appropriate room.

If adopted, this procedure might lead to more homogeneous classes than at present, and reduce some of the teaching problems created when students with widely differing interests and abilities are in the same section. At least the instructor would have the pretest results on interests and knowledge available for his or her section, and could begin where the students are and not where the instructor might think, hope, wish or expect them to be. Since this system would enable students to select sections on an even more informed basis than is presently the case, it should also help prevent students from getting into sections or taking particular instructors they *really* don't want. There might be some imbalances and rationing problems with this procedure, of course, but these problems already exist with the present registration system, and they would be resolved in the same way. The present add-and-drop procedure at the end of the first week of class would also be used to facilitate this procedure.

Even if the registration authorities agree to go along with this "far-out" suggestion, it will still be necessary to secure the approval and cooperation of the economics faculty and AI's; and we have not yet initiated formal discussions in this area. We are, however, much further along with implementing the teacher seminar and the student workbook suggestions mentioned above.

Seminar on Teaching Introductory Economics[9]

Beginning in the spring term of the 1975-76 school year, and hopefully continuing on a regular basis in each succeeding spring term, we plan to inaugurate a credit/no-credit graduate level seminar on teaching introductory economics. If this seminar proves to be successful, completion of this course will become a necessary but not a sufficient condition for obtaining an appointment as a new Asssociate Instructor in the following fall term. Students who complete the seminar but who are not later appointed as AI's will at least have the experience on the record and the credit on their transcripts. A large number of I.U. graduate students find academic jobs in predominantly teaching-oriented institutions, and several of them have indicated that their experience as an AI in our introductory courses was a real advantage in helping them to secure their first job. We hope to make some of this advantage available to more of our graduate students, even if they all can not be appointed to the limited number of AI positions that are available.

The primary objective of our seminar will be to improve the teaching skill of all participants, faculty as well as graduate students, and we hope that the participants who do become involved in teaching our own introductory courses will find their performance improved as a result. We certainly have enough benchmark data now to determine if there is a significant improvement in the exam performance of the students or the student evaluation ratings of the instructors completing the seminar compared to those who have gone before.

After an initial session on some propositions about learning and teaching in general, the seminar will focus heavily on developing skills in the areas mentioned on page 17 above enthusiasm; clarifying objectives; construction of homework problems, exams and quizzes; giving feedback on student performance; preparing for class meetings; speaking ability and lecturing techniques; and developing a variety of examples and applications on difficult points. We plan to use micro teaching and videotaping to enable participants to evaluate their own teaching, and we plan to have each participant give at least one "guest" lecture in an actual introductory class that will be observed by the other participants. Each participant will also have to design, grade and report back to students a "guest" homework problem, exam or quiz in an actual introductory class.

With this background, we feel that our participants should be better equipped to develop into effective instructors. We also hope to use the seminar as a continuing source of new and improved material for the student workbooks in E103 and E104.

Student Workbooks in Introductory Economics

We have experienced some difficulty in communicating to both instructors and students *exactly* what is meant by "a firm grasp of a few basic principles," and "the process of orderly problem-solving." Lists of "key concepts" suffer from the fact that some ideas can be explained and understood at different levels of complexity, and attempts to spell out the appropriate level of complexity verbally or in writing have proven to be extremely lengthly and tedious. We have found that the most effective and least ambiguous way to communicate is to say "students should be able to answer with *x* percent accuracy questions (or problems) similar to the following." It is difficult to find multiple-choice questions that go beyond memory or recall in commercially produced "workbooks" for students or "manuals" for instructors, however, and most of the "problems" in these sources do not go beyond calculating the answer, with little attempt made to have students compare answers to various problems with respect to different objectives or criteria. Some parts of some programmed text do better in this latter respect, but they contain a lot of other material that is not well suited to our purposes.

To overcome these difficulties, we are attempting to develop a series of multiple-choice questions, structured essay questions, and homework problems that can be used in various ways as far as collecting and grading them is concerned, but which offer specific, concrete examples of the type of learning we want students to achieve.

By the beginning of the second semester of the 1975-76 school year we hope to have assembled enough material to produce a "workbook" for students in both E103 and E104. Answers to some of the multiple-choice questions, and sample answers to some of the essay questions and homework problems will be provided in the back of the workbooks to enable students to check on their understanding and to illustrate concretely what is expected of them in the way of organization, clarity, and specificity of written answers.

Samples of some of the homework problems that we have developed for inclusion in the forthcoming workbooks are shown in Appendices XII-XVII. These particular problems, like others not shown, have been developed as the result of our experience to date, and there is a rationale behind each one.

The problem on price elasticity of demand shown in Appendix XII explains the idea of the total revenue test of this concept, and provides the student several opportunities to test his or her understanding in both a multiple-choice and an essay format. The student is also required to plot and label a demand curve from the data provided, since our experience has indicated that many of our students are not comfortable with graphical presentations until they have actually drawn a few simple graphs with their own hands. They apparently learn with their fingers as well as with their eyes, ears, hearts and minds.

Once the basic idea of price elasticity has been developed, however, we do not want to leave it until the student can see its relevance in analyzing various policy proposals, so the homework problems shown in Appendices XIII and XIV have been developed to indicate how the price elasticity of demand relates to the effects of excise taxes and various farm price support proposals. These homework problems force students really to *study* their graph work and to fill in a whole series of specific, concrete numbers before reaching a conclusion. These problems are also structured so that the student systematically considers alternatives and the implications of various alternatives with respect to different goals—the type of thinking indicated in our third course goal discussed above.

We have found that once the idea of price elasticity of demand has been developed and applied, students still have difficulty transferring this understanding to the closely related concept of the price elasticity of supply, so the homework problem shown in Appendix XV is designed to help them to make this transition. Like most of our problems, this one starts with a concrete example and specific responses and leads to a series of more open-ended essay responses that hopefully enable students to "put it all together" and sum things up in their own words.

In addition to graphical and tabular presentations, most of our instructors tend to rely on equations more in E104 than in E103. Yet many of our students erect a mental block and develop a hostile attitude the moment an equal sign makes an appearance. The series of homework exercises and the brief review quiz shown in Appendix XVI have been developed to help to overcome this problem.

Once students have laboriously filled in a few tables and plotted or interpreted a few graphs, they are more receptive to the idea that equations are simply a convenient, unambiguous way to represent relations among variables. The tables and graphs also help students to see the concrete implications of various relations that are sometimes not as apparent in the cryptic simplicity of some equations. In the last analysis we want students to see that there are alternative ways of expressing ideas, and that for some purposes some modes may be more useful than others. Regardless of the form of expression, however, what is really important is the basic economic relationships involved.

The final exam performance of students on question 13 in Appendix XI and on some other final exam questions not shown indicates that, beyond calculating some number, many of our students have real trouble in understanding the dynamic adjustments underlying multiplier analysis, and aren't *really* aware of the fact that consumption *and* savings, as well as investment *and* government spending *and* tax receipts can *all* increase when output and income expand.

The homework problem shown in Appendix XVII is one of a few problems designed to force students to consider the behavior of different subaggregates of the economy when GNP expands or contracts under different circumstances; and it also forces them to consider systematically the implications of alternative policies for achieving different (and sometimes conflicting) specific objectives.

Once a particular student workbook becomes available for a few terms, there is the probability that some students may just start copying the answers from the files of their predecessors. If the workbook is used as a learning and a communication devise rather than a grading devise, however, only the student suffers under these circumstances. Nevertheless, the numbers in some problems can be changed from time to time to keep them "fresh," and to discourage mindless copying; but our desire to keep our applications relevant to changing circumstances is a much better reason for periodically revising the workbook.

It takes a considerable period of time to develop and work the bugs out of good homework problems and multiple-choice questions that deal with the types of thinking we want to develop in our courses. Even with considerable dedication, it is usually beyond the capacity of individual graduate students or faculty members to develop very many of these items in a single semester. Therefore, we see the seminar described above as playing a key role in coordinating our efforts and adding to our resources in developing more material that adequately communicates and measures the type of thinking we are trying to develop in our students. Others who would like to join us in these efforts are welcome.

Footnotes

[1] See "An Experimental, Evaluated Elementary Course," *Journal of Economic Education*, 2 (Spring 1971), 167-173.

[2] See Phillip Saunders, *Learning and Teaching*, Occasional Paper No. 4, Distinguished Lecture Series, Bureau of Business and Economic Research, School of Business Administration, Georgia State College, Atlanta, 1966.

[3] A variety of factor analyses have been performed on the questionnaire results in E103 and E104 separately for individual terms and for the eight term totals in each course. The eight term totals for both courses have also been pooled and additional factor analyses run on these data. The individual term results have yielded a similar factor structure in each different term, indicating that the instrument is reliable and that it produces consistent factor patterns over time. The results have also indicated, however, that the instrument produced a more refined factor structure in E104 than in E103.

The analyses of the eight term totals in E103 yielded three strong factor patterns:

1. Questions 7, 9, 14, 17, 20, 26 and 27 which might be called "instructor teaching ability."
2. Questions 29, 30 and 31 which might be called "course content and organization."
3. Questions 32, 33, 34, 35, 36, 37, 38 and 39 which cover a broad range of things concerned with "course materials and class environment."

The analyses of the eight term totals in E104 yielded the same strong patterns on the first two of these factors (questions 10 and 13 were added to factor 1), but in E104 the third factor above appeared as three separate factors:

1. Questions 32 and 33 on class size and classroom facilities.

2. Questions 34 and 38 on textbooks.
3. Questions 35 and 39 on required readings other than the principal textbook.

The E103 results also produced a weak factor of questions 19 and 21 that did not show up in E104, and the E104 results also produced a strong factor of questions 5, 6 and 37 that did not show up in E103.

Since the same questionnaire apparently yields a different factor structure in E103 and in E104, the analysis of the pooled results may not be appropriate for our purposes at I.U. Since many schools combine micro and macro in the same course, however, it may be worth reporting that pooling the eight term totals in both courses yielded the following five factors, of which the fifth is much weaker than the other four.

1. Instructor teaching ability: Questions 7, 9, 10, 13, 14, 17, 20, 26 and 27.
2. Course materials and class environment: Questions 32, 33, 34, 35, 36, 37, 38 and 39.
3. Course content and organization: Questions 29, 30 and 31.
4. Opportunity to raise questions and disagree in class: Questions 19 and 21.
5. Attitudes toward course subject matter: Questions 4, 5 and 6.

[4] The means are calculated by assigning the following numerical values to the various responses indicated on the questionnaire: A = 4, B = 3, C = 2, D = 1, E = 0. In cases where an instructor teaches more than one section in any given term, the sections are combined in calculating the mean rating for that instructor for that term.

[5] See footnote 3 above for the specific questions associated with these two factors.

[6] Each instructor distributes both the common multiple-choice Part I of the final and his or her own Part II of the exam at the beginning of the two-hour examination period. The written instructions on the multiple-choice questions state "You must hand in this question sheet and your answer sheet at [*one hour after the test begins*]. You can start on Part II of this exam before this time if you wish, but *all* Part I material will be collected at ___ a.m. (p.m.)"

[7] See questions 1 and 5 in Appendix X and questions 3, 17 and 20 in Appendix XI.

[8] Indeed, some supposedly "easy" definition questions have consistently proven to be surprisingly difficult for our students (see question 2 in Appendix XI). In addition to putting terms or definitions in the stems of a few multiple-choice questions, they are also used as distractors in some questions to sort out students who tend to answer multiple-choice questions simply by looking for impressive terminology without really understanding what the words mean. (See option D of questions 6 and 7 in Appendix X.)

[9] Even though some questions have been used several times, the ordering of the options is not always the same each time a question is used. The order of options is sometimes changed in order to insure a proper distribution of the number of times each option is the correct alternative on a particular test, and to insure a systematic treatment of options of different length—a balance of the shortest option "A" proceeding to the longest option "D," and vice versa.

For more information on constructing and analyzing multiple-choice questions in economics see Arthur L. Welsh, "Multiple Choice Objective Test," and "The Item Analysis of Multiple Choice Test Items," in *Teacher Training Manual for Graduate Students in Economics* (Joint Council on Economic Education, mimeo.)

[10] For benchmark purposes, it might be noted that the postnorm data for the four forms of the 33-item, four-option Test of Understanding in College Economics (TUCE) indicated a range of K-R coefficients of .72-.76. The mean percentage correct on the four forms of the TUCE ranged from 55.12 to 58.82 in the postnorm group.

[11] While there is no simple linear transformation, each 1 point difference in the scaled "*t*" score usually converts to a difference of between 2 and 3 percent in the raw percentage score on a given exam.

[12] See *Review of Educational Research*, 41, No. 5 (1971), 511-535.

[13] The overall course mean for this variable and the previous variable should be identical. The slight differences in the overall means shown in Tables 13 and 14 at the second and third decimal place are due to rounding errors in gang punching the section mean (calculated to two decimals) on the data card of each student in a particular section.

[14] The negative association in E104 is significant at the .13 level.

[15] The negative association is significant only at the .27 level in E103 and the .38 level in E104.

[16] Henry H. Villard, "Some Reflections on Student Evaluation of Teaching," *Journal of Economic Education*, 5 (Fall 1973), 50.

[17] John C. Soper, "Soft Research on a Hard Subject: Student Evaluation Reconsidered," *Journal of Economic Education*, 5 (Fall 1973), 23.

[18] See Phillip Saunders, "More on the Use of Graduate Student Instructors in the Introductory Economics Course," *Journal of Economic Education*, 3 (Fall 1971), 36-40.

[19] The exception was regression No. 4.

[20] The exception again was regression No. 4.

[21] The two most dramatic one-term improvements to date involve an AI whose mean rating on question 26 jumped from 0.93 in the fall to 2.59 in the spring, and an AI whose mean rating increased from 2.00 in E103 to 3.31 in E104.

[22] On an individual basis, the rating on question 5 was higher than the rating on question 4 in 18 of the 41 AI cases and 20 of the 45 RF cases reported in Table 9; and student enrollment was larger in the higher RF cases than in the higher AI cases.

[23] On an individual basis, the rating on question 5 was higher than the rating on question 4 in 24 of the 37 AI cases and in 19 of the 38 RF cases reported in Table 10; and student enrollment was larger in the higher AI cases than in the higher RF cases.

[24] Related to the responses on questions 4 and 5, but with a broader focus than simply the student's attitude with respect to "interest," is the response to question 6 which asks "would you elect to take this course if it was not a required course?" The overall, 8-term, weighted mean response of 2.39 in E103 and 2.51 in E104 are between the responses "not sure" (2.0) and "probably" (3.0), with the responses from the students of regular faculty members being significantly higher than the responses from the students of AI's in both courses.

Also of some relevance is question 25 which states, "The instructor so aroused my interest that I was inspired to investigate the subject beyond the formal course requirements." There were many written comments on this question such as "impossible," "are you kidding?" "dream on," "nobody does this." The overall, 8-term, weighted means of 1.59 in E103 and 1.73 are between "disagree" (1.0) and "neither agree or disagree" (2.0) and bear out this sentiment. Nevertheless, 3.5 percent of the E103 students and 5.0 percent of the E104 students "strongly agreed" with this statement, and 13.6 percent of the students in E103 and 17.0 percent of the students in E104 "agreed" with it.

[25] If one looks at the percentage distribution of responses around the overall mean, 12.0 percent of the students in both E103 and E104 indicated a response of "strongly agree" to this question; and 27.3 percent of the E103 students and 30.5 percent of the E104 students indicated a response of "agree" to this question. Considering the nature of the large numbers of students initially herded into introductory economics, these percentages at least "agreeing" that they would like to take more courses are probably more encouraging than the arithmetic mean of all responses indicates.

[26] The fifteen specific comparisons are:

TUCE Question No.	Postnorm Data (% Answering Correctly)	Overall Mean I.U. Data Calculated from Various Terms Question Used on Final (% Answering Correctly)
I A 15	60	62
I A 22	51	70
I A 33	32	58
I B 7	80	79
I B 14	56	71
I B 15	53	63
I B 21	47	54
I B 27	53	69
II A 11	73	77
II A 14	67	67
II B 8	81	88
II B 9	68	76
II B 17	58	73
II B 26	39	50
II B 28	51	48
Mean percentage correct on 15 questions	57.93	67.00

[27] In terms of the students' own perceptions as expressed on the evaluation questionnaire; the following overall percentage distributions have been obtained over the past 8 terms.

Question 30 "The subject matter of this course is intellectually challenging."

	A	B	C	D	E
E103	22.3%	53.2%	17.8%	5.7%	1.0%
E104	28.8%	53.4%	13.6%	3.6%	0.7%

Question 36 "I feel that I learned a lot from this course."

E103	20.3%	47.8%	18.4%	10.6%	2.9%
E104	25.2%	48.1%	15.9%	8.4%	2.4%

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Table 1
Enrollment in E103 and E104 Compared to Last Two Years of Old E201-E202 Sequence

Fall Terms

Year	E 201 E 103	E 202 E 104	Total	Fr. & Soph. Bloomington Campus	Intro. Econ. as % of Fr. & Soph.
69-70	1,466	363	1,829	11,544	15.8%
70-71	1,333	360	1,693	11,807	14.3%
71-72	1,364	330	1,694	12,038	14.1%
72-73	1,346	445	1,791	11,802	15.2%
73-74	1,456	646	2,102	11,739	17.9%
74-75	1,640	712	2,352	11,875	19.8%

Spring Terms

Year	E 201 E 103	E 202 E 104	Total	Fr. & Soph. Bloomington Campus	Intro. Econ. as % of Fr. & Soph.
69-70	449	917	1,366	10,416	13.1%
70-71	435	900	1,335	10,761	12.4%
71-72	590	1,064	1,654	10,737	15.4%
72-73	725	1,002	1,727	11,437	15.1%
73-74	889	1,140	2,029	11,102	18.3%
74-75	919	1,242	2,161	11,558	18.7%

Summer Terms

Year	E 201 E 103	E 202 E 104	Total	Fr. & Soph. Bloomington Campus	Intro. Econ. as % of Fr. & Soph.
70	42	48	90	2,042	4.4%
71	52	37	89	2,063	4.3%
72	101	98	199	1,933	10.3%
73	108	110	218	1,968	11.1%
74	118	121	239	1,746	13.7%
75	130	123	253	2,068	12.2%

Credit by Exam in E103 and E104
(Credit by Exam Not Previously Available for E201-E202)

	E103			E104		
Date	Exams Taken	Exams Passed	Percent Passing	Exams Taken	Exams Passed	Percent Passing
1-73	15	3	20%	12	4	33%
8-73	2	2	100%	4	1	25%
1-74	5	3	60%	9	3	33%
8-74	2	0	0%	2	0	0%
1-75	9	3	33%	12	5	42%
Totals	33	11	33%	39	13	33%

Table 2
Total Annual Enrollment Changes in Introductory Economics (Including Credit by Exam)

Course and Year	Fall, Spring, Summer Total	Absolute Change and % of Preceeding Year
E201-E202 1969-70	3,285	—
E201-E202 1970-71	3,117	−168 (−5%)
E103-E104 1971-72	3,547	+430 (14%)
E103-E104 1972-73	3,743	+196 (5%)
E103-E104 1973-74	4,379	+636 (17%)
E103-E104 1974-75	4,774	+395 (9%)

Total increase since 70-71 (4,774 - 3,117) = 1,657 or 53.2 percent of 70-71 total.

Table 3
Annual Changes in Number of Economics Majors

Year	Number of Econ. Majors	Absolute Change and % of Preceeding Year
1969-70	NA	—
1970-71	89	—
1971-72	110	+21 (24%)
1972-73	115	+ 5 (5%)
1973-74	129	+14 (12%)
1974-75	142	+13 (10%)

Total increase since 70-71 (142 - 89) = 53 or 59.6 percent of 70-71 total.

NOTE: All data in Tables 1, 2 and 3 are based on memos from the Assistant Registrar stating: "This enrollment analysis report reflects all fieldhouse registrations, changes during Drop and Add. . . . There are always students adding and, much more likely, dropping courses throughout the semester."

Table 4
Profile of I.U. Students Taking Introductory Economics: 8 Term Totals for E103 and E104

		E103	E104
Initial enrollment		8,929	6,581
Withdrawals and incompletes		1,103 (12.4%)	733 (11.1%)
No. of students completing course		7,826	5,848
Data for students completing course:			
Verbal SAT — mean & (std. dev.)		472 (96)	476 (96)
Math SAT — mean & (std. dev.)		523 (99)	532 (99)
Accum. GPA — mean & (std. dev.)		2.72 (.61)	2.74 (.61)
Econ. course grade — mean & (std. dev.)		2.44 (1.04)	2.43 (1.08)
Distribution of	A	18%	18%
	B	29%	30%
	C	36%	35%
	D	14%	12%
	F	4%	5%
Percent males		69%	74%
Percent required to take course*		74%	81%
Class standing —	Fresh.	27%	15%
	Soph.	53%	60%
	Junior	14%	19%
	Senior	5%	7%
	Other	1%	0%
School —	University Division	43%	30%
	Arts & Sciences	21%	20%
	Business	29%	46%
	Education	5%	3%
	Other	2%	1%

*Data available only from students completing course and instructor evaluation questionnaires: 5,823 (74.4 percent) of 7,826 students completing E103; and 4,308 (73.6 percent) of 5,848 students completing E104.

Table 5
Term by Term Profile of I.U. Students Taking E103: Fall 71-72 Through Spring 74-75

		Fall Terms		
	71-72	72-73	73-74	74-75
Initial enrollment	1,364	1,346	1,456	1,640
Withdrawals & incompletes	173 (12.7%)	212 (15.3%)	218 (15.0%)	137 (8.4%)
No. of students completing course	1,191	1,134	1,238	1,503
Data for students completing course:				
Verbal SAT — mean & (std. dev.)	479 (92)	474 (93)	469 (93)	463 (94)
Math SAT — mean & (std. dev.)	535 (92)	525 (97)	522 (101)	517 (98)
Accum. GPA — mean & (std. dev.)	2.66 (.59)	2.76 (.59)	2.71 (.59)	2.73 (.59)
E103 grade — mean & (std. dev.)	2.40 (1.01)	2.44 (1.01)	2.49 (1.05)	2.42 (1.08)
Distribution of A	15%	17%	20%	18%
B	29%	30%	29%	30%
C	38%	37%	35%	34%
D	15%	14%	13%	13%
F	3%	3%	3%	5%
Percent males	76%	71%	74%	68%
Percent required to take course*	74%	76%	76%	79%
Class standing — Fresh.	16%	18%	24%	23%
Soph.	66%	62%	57%	60%
Junior	12%	15%	14%	12%
Senior	5%	5%	5%	5%
Other	1%			
School — University Division	28%	37%	40%	42%
Arts & Sciences	24%	19%	19%	18%
Business	38%	37%	34%	34%
Education	7%	4%	4%	4%
Other	3%	3%	3%	2%

	Spring Terms			
	71-72	**72-73**	**73-74**	**74-75**
Initial enrollment	590	725	889	919
Withdrawals & incompletes	117 (19.8%)	111 (15.3%)	70 (7.9%)	65 (7.1%)
No. of students completing course	473	614	819	854
Data for students completing course:				
Verbal SAT — mean & (std. dev.)	487 (99)	477 (91)	466 (105)	470 (100)
Math SAT — mean & (std. dev.)	536 (97)	523 (97)	518 (108)	517 (103)
Accum. GPA — mean & (std. dev.)	2.68 (.62)	2.75 (.61)	2.71 (.64)	2.75 (.66)
E103 grade — mean & (std. dev.)	2.58 (.93)	2.46 (1.04)	2.37 (1.08)	2.42 (1.06)
Distribution of A	19%	19%	17%	17%
B	32%	27%	27%	30%
C	39%	36%	38%	35%
D	9%	15%	13%	15%
F	1%	3%	5%	4%
Percent males	65%	68%	63%	65%
Percent required to take course*	67%	68%	73%	72%
Class standing — Fresh.	33%	39%	40%	42%
Soph.	41%	38%	39%	39%
Junior	19%	15%	16%	14%
Senior	6%	5%	6%	6%
Other	1%	3%		
School — University Division	46%	52%	60%	55%
Arts & Sciences	29%	21%	19%	21%
Business	13%	17%	15%	19%
Education	9%	6%	4%	3%
Other	3%	4%	2%	2%

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*Data available only from students completing course and instructor evaluation questionnaires. Ranges from 81.0 percent of 1,134 students in Fall 72-73 to 66.4 percent of 1,191 students in Fall 71-72.

Table 6
Term by Term Profile of I.U. Students Taking E104:
Fall 71-72 Through Spring 74-75

		Fall Terms		
	71-72	72-73	73-74	74-75
Initial enrollment	330	445	646	712
Withdrawals & incompletes	70 (21.2%)	68 (15.3%)	64 (9.9%)	69 (9.7%)
No. of students completing course	260	377	582	643
Data for students completing course:				
Verbal SAT — mean & (std. dev.)	493 (90)	485 (98)	477 (101)	467 (96)
Math SAT — mean & (std. dev.)	539 (95)	540 (103)	527 (104)	521 (100)
Accum. GPA — mean & (std. dev.)	2.63 (.59)	2.72 (.64)	2.72 (.61)	2.74 (.60)
E104 grade — mean & (std. dev.)	2.53 (1.02)	2.52 (.97)	2.47 (1.03)	2.26 (1.03)
Distribution of A	20%	17%	20%	14%
B	29%	34%	27%	25%
C	35%	36%	36%	40%
D	12%	11%	16%	17%
F	2%	2%	2%	4%
Percent males	66%	74%	73%	68%
Percent required to take course*	85%	75%	78%	76%
Class standing — Fresh.	9%	18%	11%	14%
Soph.	51%	42%	57%	53%
Junior	29%	28%	23%	23%
Senior	11%	11%	8%	10%
Other		1%	1%	
School — University Division	12%	30%	28%	32%
Arts & Sciences	30%	26%	22%	22%
Business	50%	37%	45%	43%
Education	7%	5%	4%	2%
Other	1%	2%	1%	1%

	Spring Terms			
	71-72	72-73	73-74	74-75
Initial enrollment	1,064	1,002	1,140	1,242
Withdrawals & incompletes	148 (13.9%)	131 (13.1%)	81 (7.1%)	102 (8.2%)
No. of students completing course	916	871	1,059	1,140
Data for students completing course:				
Verbal SAT — mean & (std. dev.)	480 (90)	483 (95)	474 (95)	467 (99)
Math SAT — mean & (std. dev.)	546 (92)	537 (94)	531 (95)	524 (103)
Accum. GPA — mean & (std. dev.)	2.70 (.58)	2.83 (.60)	2.71 (.62)	2.79 (.61)
E104 grade — mean & (std. dev.)	2.51 (.99)	2.50 (1.01)	2.57 (1.10)	2.22 (1.21)
Distribution of A	18%	18%	22%	15%
B	32%	32%	32%	28%
C	36%	36%	31%	33%
D	12%	11%	10%	11%
F	3%	3%	5%	13%
Percent males	79%	74%	77%	71%
Percent required to take course*	83%	83%	82%	83%
Class standing — Fresh.	12%	14%	18%	17%
Soph.	72%	63%	53%	62%
Junior	11%	15%	21%	15%
Senior	5%	7%	6%	6%
Other		1%	2%	
School — University Division	20%	28%	41%	32%
Arts & Sciences	23%	18%	16%	17%
Business	50%	50%	39%	49%
Education	5%	3%	2%	2%
Other	2%	1%	2%	

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*Data available only from students completing course and instructor evaluation questionnaire. Ranges from 84.9 percent of 377 students in Fall 72-73 to 64.0 percent of 1,140 students in Spring 74-75.

Table 7

Profile of I.U. Students Completing and Not Completing Course and Instructor Evaluation Questionnaires: 8 Term Totals for E103

		With Questionnaires	Without Questionnaires	Total
No. of students completing course		5,823	2,003	7,826
Verbal SAT — mean & (std. dev.)		473 (96)	467 (95)	472 (96)
Math SAT — mean & (std. dev.)		525 (99)	519 (102)	523 (99)
Accum. GPA — mean & (std. dev.)		2.78 (.60)	2.54 (.59)	2.72 (.61)
Econ. course grade — mean & (std. dev.)		2.57 (1.00)	2.06 (1.06)	2.44 (1.04)
Distribution of	A	20%	9%	18%
	B	31%	24%	29%
	C	35%	39%	36%
	D	11%	20%	14%
	F	2%	8%	4%
Expected course grade				
Comp. quest. only — mean & (std. dev.)		2.79 (.84)		
Distribution of	A	21%		
	B	42%		
	C	33%		
	D	4%		
	F	0%		
Percent males		68%	74%	69%
Percent required to take course		74%		
Class standing — Fresh.		27%	27%	27%
Soph.		54%	52%	53%
Junior		14%	15%	14%
Senior		5%	6%	5%
Other				1%
School — University Division		42%	45%	43%
Arts & Sciences		21%	21%	21%
Business		29%	27%	29%
Education		5%	4%	5%
Other		3%	3%	2%

Table 8

Profile of I.U. Students Completing and Not Completing Course and Instructor Evaluation Questionnaires: 8 Term Totals for E104

		With Questionnaires	Without Questionnaires	Total
No. of students completing course:		4,308	1,540	5,848
Verbal SAT — mean & (std. dev.)		478 (95)	469 (97)	476 (96)
Math SAT — mean & (std. dev.)		535 (97)	525 (101)	532 (99)
Accum. GPA — mean & (std. dev.)		2.79 (.57)	2.60 (.60)	2.74 (.61)
Econ. course grade — mean & (std. dev.)		2.58 (1.00)	2.01 (1.16)	2.43 (1.08)
Distribution of	A	21%	9%	18%
	B	31%	25%	30%
	C	35%	36%	35%
	D	11%	15%	12%
	F	2%	14%	5%
Expected course grade				
Comp. quest. only — mean & (std. dev.)		2.83 (.84)		
Distribution of	A	23%		
	B	41%		
	C	32%		
	D	4%		
	F	0%		
Percent males		72%	78%	74%
Percent required to take course		81%		
Class standing — Fresh.		14%	16%	15%
Soph.		59%	58%	60%
Junior		19%	18%	19%
Senior		7%	7%	7%
Other		1%	1%	
School — University Division		29%	32%	30%
Arts & Sciences		20%	21%	20%
Business		47%	43%	46%
Education		3%	3%	3%
Other		1%	1%	1%

Table 9

Analysis of Mean Ratings on Each Question of E103 Course and Instructor Evaluation Form by A.I. and R.F.

(8 term totals; 5,823 respondents; 74.4% response rate; 41 AI means, 45 RF means; some instructors rated more than one time.)

Ques. No. & Type of Instructor	Overall Mean & (Std. Dev.) Weighted by No. of Students Rating Each Instructor	Overall Mean & (Std. Dev.) Unweighted	Range of Instructor Means	Mean Rating for 90th %ile	Mean Rating for 75th %ile	Mean Rating for 50th %ile	Mean Rating for 25th %ile	Mean Rating for 10th %ile
1. AI	3.81 (.39)	3.81 (.10)	4.00-3.58	3.92	3.89	3.84	3.76	3.65
RF	3.77 (.42)	3.79 (.12)	4.00-3.54	3.96	3.88	3.79	3.70	3.65
Both	3.79 (.41)	3.80 (.11)	4.00-3.54	3.94	3.88	3.82	3.72	3.65
2. AI	3.74 (.44)	3.74 (.08)	3.89-3.59	3.83	3.79	3.75	3.70	3.65
RF	3.74 (.45)	3.76 (.08)	3.92-3.57	3.86	3.81	3.76	3.70	2.67
Both	3.74 (.44)	3.75 (.08)	3.92-3.57	3.85	3.80	3.76	3.70	3.66
3. AI	2.79 (.83)	2.88 (.31)	3.72-2.24	3.41	3.00	2.92	2.70	2.56
RF	2.80 (.84)	2.81 (.18)	3.29-2.34	3.00	2.89	2.81	2.71	2.62
Both	2.79 (.84)	2.84 (.25)	3.72-2.24	3.09	2.96	2.84	2.70	2.60
4. AI	2.90 (.93)	2.90 (.15)	3.16-2.59	3.13	3.04	2.90	2.80	2.72
RF	2.95 (.96)	2.92 (.18)	3.35-2.53	3.13	3.04	2.94	2.81	2.72
Both	2.92 (.94)	2.91 (.16)	3.35-2.53	3.13	3.04	2.91	2.80	2.72
5. AI	2.79 (1.12)	2.79 (.32)	3.41-1.94	3.24	3.01	2.78	2.58	2.47
RF	2.94 (1.09)	2.82 (.32)	3.40-2.11	3.20	3.07	2.87	2.65	2.33
Both	2.87 (1.10)	2.81 (.32)	3.41-1.94	3.22	3.06	2.80	2.63	2.47
6. AI	2.32 (1.24)	2.31 (.35)	3.09-1.63	2.92	2.52	2.27	2.14	1.89
RF	2.47 (1.27)	2.30 (.37)	3.29-1.51	2.74	2.59	2.33	2.04	1.90
Both	2.39 (1.26)	2.31 (.36)	3.29-1.51	2.78	2.55	2.29	2.08	1.89
7. AI	3.15 (.84)	3.13 (.41)	3.95-1.75	3.58	3.35	3.20	3.04	2.58
RF	3.41 (.76)	3.21 (.42)	3.90-2.02	3.73	3.52	3.24	3.03	2.79
Both	3.28 (.81)	3.17 (.42)	3.95-1.75	3.61	3.47	3.20	3.03	2.58
8. AI	3.20 (.90)	3.17 (.39)	3.94-2.20	3.62	3.45	3.29	2.97	2.61
RF	3.13 (.94)	3.00 (.42)	3.67-2.07	3.54	3.34	2.97	2.63	2.55
Both	3.16 (.92)	3.08 (.41)	3.94-2.07	3.55	3.41	3.13	2.80	2.55
9. AI	2.70 (1.04)	2.68 (.41)	3.38-1.64	3.16	2.97	2.74	2.43	2.10
RF	2.79 (1.08)	2.56 (.52)	3.46-1.23	3.19	3.00	2.57	2.27	1.94
Both	2.75 (1.06)	2.62 (.47)	3.46-1.23	3.19	2.97	2.70	2.34	1.98
10. AI	2.75 (1.07)	2.75 (.38)	3.38-1.66	3.24	3.03	2.79	2.55	2.29
RF	2.85 (1.04)	2.72 (.38)	3.30-1.66	3.22	3.03	2.71	2.44	2.25
Both	2.80 (1.06)	2.73 (.38)	3.38-1.66	3.22	3.03	2.76	2.46	2.25
11. AI	3.01 (.96)	3.04 (.61)	3.76-0.85	3.65	3.53	3.19	2.78	2.31
RF	3.25 (.81)	3.17 (.46)	3.82-1.94	3.66	3.53	3.30	2.80	2.68
Both	3.13 (.90)	3.10 (.53)	3.82-1.94	3.65	3.53	3.21	2.80	2.46
12. AI	3.08 (.88)	3.08 (.31)	3.70-2.23	3.47	[illegible]	3.18	2.92	2.71
RF	2.95 (.97)	2.99 (.36)	3.56-1.96	3.46	3.26	2.97	2.86	2.64
Both	3.02 (.93)	3.03 (.34)	3.70-1.96	3.46	3.26	3.08	2.86	2.65
13. AI	2.74 (.98)	2.73 (.34)	3.39-1.93	3.17	2.99	2.78	2.54	2.24
RF	2.87 (1.00)	2.73 (.42)	3.37-1.45	3.29	3.12	2.68	2.38	2.29
Both	2.80 (.99)	2.73 (.39)	3.39-1.45	3.28	3.03	2.74	2.47	2.27
14. AI	3.23 (.82)	3.20 (.43)	3.74-1.51	3.59	3.51	3.33	3.08	2.69
RF	3.47 (.72)	3.30 (.39)	3.82-2.30	3.69	3.66	3.37	3.16	2.76
Both	3.35 (.78)	3.25 (.41)	3.82-1.51	3.67	3.54	3.35	3.12	2.76

Ques. No. & Type of Instructor	Overall Mean & (Std. Dev.)		Range of Instructor Means	Mean Rating for				
	Weighted by No. of Students Rating Each Instructor	Unweighted		90th %ile	75th %ile	50th %ile	25th %ile	10th %ile
15. AI	1.40 (.99)	1.42 (.32)	2.21-0.69	1.78	1.68	1.46	1.20	1.10
RF	1.50 (.99)	1.57 (.31)	2.23-0.90	2.05	1.75	1.54	1.37	1.22
Both	1.45 (.99)	1.50 (.32)	2.23-0.69	1.96	1.72	1.51	1.26	1.16
16. AI	1.19 (.77)	1.19 (.16)	1.76-0.96	1.40	1.28	1.17	1.07	1.02
RF	1.16 (.76)	1.18 (.16)	1.55-0.88	1.43	1.26	1.16	1.10	1.00
Both	1.17 (.77)	1.19 (.16)	1.76-0.88	1.40	1.28	1.16	1.08	1.01
17. AI	2.77 (1.01)	2.72 (.58)	3.38-0.77	3.23	3.15	2.91	2.60	2.09
RF	2.98 (1.03)	2.74 (.60)	3.57-1.35	3.38	3.27	2.93	2.26	1.96
Both	2.88 (1.03)	2.73 (.59)	3.57-0.77	3.33	3.17	2.93	2.36	1.98
18. AI	2.87 (.89)	2.86 (.31)	3.33-2.10	3.18	3.11	2.93	2.69	2.42
RF	2.82 (.99)	2.71 (.4[illegible])	3.30-1.62	3.14	3.05	2.83	2.47	2.20
Both	2.85 (.94)	2.78 (.38)	3.33-1.62	3.14	3.09	2.88	2.54	2.23
19. AI	3.23 (.78)	3.25 (.21)	3.60-2.68	3.50	3.39	3.32	3.16	2.93
RF	3.08 (.86)	3.05 (.35)	3.76-2.10	3.39	3.25	3.08	2.95	2.66
Both	3.16 (.82)	3.14 (.31)	3.76-2.10	3.43	3.35	3.19	3.03	2.81
20. AI	2.94 (.96)	2.92 (.39)	3.67-1.78	3.40	3.19	2.96	2.73	2.37
RF	3.19 (.86)	3.06 (.40)	3.79-1.61	3.47	3.36	3.14	2.84	2.57
Both	3.06 (.92)	2.99 (.40)	3.79-1.61	3.41	3.27	3.04	2.75	2.54
21. AI	2.81 (.92)	2.80 (.38)	3.49-1.73	3.19	3.04	2.85	2.65	2.52
RF	2.66 (.99)	2.57 (.38)	3.19-1.42	2.94	2.83	2.64	2.39	2.11
Both	2.73 (.96)	2.68 (.39)	3.49-1.42	3.10	2.94	2.73	2.52	2.12
22. AI	3.42 (.72)	3.41 (.21)	3.76-2.78	3.66	3.59	3.43	3.29	3.11
RF	3.25 (.79)	3.24 (.30)	3.76-2.21	3.59	3.44	3.30	3.08	2.87
Both	3.34 (.76)	3.32 (.27)	3.76-2.21	3.64	3.52	3.37	3.18	2.96
23. AI	1.85 (.98)	1.87 (.20)	2.30-1.53	2.16	1.99	1.82	1.75	1.67
RF	1.67 (1.01)	1.78 (.28)	2.32-1.30	2.16	2.00	1.77	1.58	1.42
Both	1.76 (1.00)	1.82 (.25)	2.32-1.30	2.16	1.99	1.80	1.67	1.52
24. AI	3.10 (.76)	3.08 (.27)	3.77-2.56	3.40	3.27	3.11	2.88	2.73
RF	2.95 (.86)	2.88 (.45)	3.59-1.74	3.46	3.26	2.91	2.59	2.36
Both	3.02 (.81)	2.97 (.39)	3.77-1.74	3.45	3.26	3.03	2.73	2.54
25. AI	1.52 (.99)	1.52 (.32)	2.32-0.88	1.91	1.69	1.55	1.39	1.02
RF	1.66 (1.01)	1.55 (.33)	2.19-0.84	1.94	1.79	1.56	1.31	1.12
Both	1.59 (1.00)	1.53 (.32)	2.32-0.84	1.94	1.76	1.55	1.33	1.07
26. AI	2.66 (1.05)	2.62 (.57)	3.56-0.93	3.27	3.05	2.64	2.41	1.77
RF	3.05 (1.03)	2.76 (.61)	3.68-1.32	3.48	3.22	2.82	2.52	1.76
Both	2.85 (1.06)	2.69 (.59)	3.68-0.93	3.45	3.14	2.77	2.45	1.76
27. AI	2.76 (1.27)	2.72 (.67)	3.69-0.88	3.49	3.24	2.88	2.45	1.61
RF	2.95 (1.26)	2.69 (.65)	3.56-1.11	3.41	3.27	2.73	2.43	1.63
Both	2.86 (1.27)	2.70 (.65)	3.69-0.88	3.43	3.24	2.82	2.43	1.61
29. AI	3.22 (.77)	3.22 (.17)	3.52-2.83	3.45	3.34	3.24	3.13	2.99
RF	3.40 (.67)	3.36 (.18)	3.88-2.96	3.57	3.49	3.37	3.29	3.14
Both	3.31 (.73)	3.30 (.19)	3.88-2.83	3.52	3.43	3.32	3.16	3.04
30. AI	2.81 (.87)	2.84 (.18)	3.20-2.29	3.07	2.98	2.86	2.74	2.58
RF	2.99 (.81)	2.94 (.18)	3.48-2.57	3.16	3.08	2.90	2.79	2.76
Both	2.90 (.84)	2.89 (.19)	3.48-2.57	3.13	3.02	2.88	2.77	2.70

Ques. No. & Type of Instructor	Overall Mean & (Std. Dev.) Weighted by No. of Students Rating Each Instructor	Overall Mean & (Std. Dev.) Unweighted	Range of Instructor Means	Mean Rating for 90th %ile	75th %ile	50th %ile	25th %ile	10th %ile
31. AI	2.72 (.85)	2.71 (.24)	3.24-2.13	3.00	2.91	2.71	2.61	2.42
RF	2.95 (.82)	2.76 (.33)	3.33-2.05	3.22	3.01	2.73	2.54	2.32
Both	2.83 (.84)	2.73 (.29)	3.33-2.05	3.21	2.93	2.73	2.55	2.36
32. AI	2.73 (1.01)	2.73 (.36)	3.43-1.95	3.26	2.87	2.74	2.56	2.29
RF	2.26 (1.11)	2.51 (.41)	3.50-1.46	2.96	2.81	2.52	2.24	1.98
Both	2.48 (1.09)	2.61 (.40)	3.50-1.46	3.17	2.85	2.65	2.32	2.14
33. AI	2.73 (.83)	2.72 (.18)	3.05-2.36	3.02	2.84	2.71	2.63	2.45
RF	2.54 (.93)	2.60 (.23)	2.94-1.94	2.89	2.77	2.64	2.47	2.32
Both	2.63 (.89)	2.65 (.22)	3.05-1.94	2.92	2.79	2.66	2.54	2.41
34. AI	2.48 (1.13)	2.49 (.34)	3.00-1.63	2.89	2.77	2.57	2.29	2.14
RF	2.40 (1.17)	2.46 (.47)	3.17-1.14	2.87	2.71	2.63	2.36	1.84
Both	2.44 (1.15)	2.47 (.41)	3.17-1.14	2.88	2.72	2.57	2.29	1.91
35. AI	2.18 (1.05)	2.19 (.30)	3.13-1.69	2.57	2.34	2.23	1.95	1.82
RF	2.22 (1.10)	2.22 (.38)	3.03-1.31	2.66	2.48	2.21	2.03	1.76
Both	2.20 (1.08)	2.21 (.34)	3.13-1.31	2.58	2.41	2.22	1.97	1.78
36. AI	2.65 (1.00)	2.67 (.32)	3.29-1.90	3.08	2.96	2.67	2.55	2.28
RF	2.78 (1.00)	2.67 (.37)	3.45-1.68	3.06	3.00	2.71	2.42	2.22
Both	2.72 (1.00)	2.67 (.35)	3.45-1.68	3.07	2.96	2.69	2.48	2.22
37. AI	2.10 (1.14)	2.13 (.29)	2.79-1.61	2.64	2.24	2.10	1.96	1.83
RF	2.22 (1.16)	2.09 (.32)	2.98-1.53	2.47	2.33	2.09	1.88	1.68
Both	2.16 (1.15)	2.11 (.30)	2.98-1.53	2.59	2.30	2.09	1.88	1.78
38. AI	2.30 (.91)	2.29 (.23)	2.78-1.78	2.64	2.44	2.30	2.13	1.99
RF	2.32 (.94)	2.32 (.30)	3.00-1.46	2.64	2.55	2.35	2.24	1.96
Both	2.31 (.93)	2.31 (.27)	3.00-1.46	2.64	2.48	2.32	2.13	1.97
39. AI	2.22 (.85)	2.26 (.28)	2.84-1.53	2.57	2.45	2.30	2.11	1.92
RF	2.25 (.90)	2.26 (.27)	2.69-1.55	2.59	2.53	2.33	2.13	1.65
Both	2.24 (.88)	2.26 (.28)	2.84-1.53	2.58	2.47	2.32	2.12	1.82

Table 10

Analysis of Mean Ratings on Each Question of E104 Course and Instructor Evaluation Form by A.I. and R.F.

(8 term totals; 4,308 respondents; 73.6% response rate; 37 AI means, 38 RF means; some instructors rated more than one time.)

Ques. No. & Type of Instructor	Overall Mean & (Std. Dev.)		Range of Instructor Means	Mean Rating for				
	Weighted by No. of Students Rating Each Instructor	Unweighted		90th %ile	75th %ile	50th %ile	25th %ile	10th %ile
1. AI	3.83 (.38)	3.82 (.12)	3.98-3.40	3.96	3.91	3.82	3.75	3.71
RF	3.80 (.39)	3.82 (.10)	4.00-3.53	3.97	3.89	3.83	3.76	3.71
Both	3.82 (.39)	3.82 (.11)	4.00-3.40	3.96	3.89	3.82	3.76	3.71
2. AI	3.81 (.39)	3.81 (.08)	3.92-3.52	3.90	3.87	3.81	3.75	3.74
RF	3.81 (.39)	3.79 (.11)	4.00-3.50	3.94	3.88	3.80	3.74	3.66
Both	3.81 (.39)	3.80 (.10)	4.00-3.50	3.90	3.87	3.80	3.75	3.68
3. AI	2.88 (.84)	2.87 (.23)	3.45-2.43	3.12	2.98	2.85	2.74	2.64
RF	2.78 (.83)	2.76 (.21)	3.24-2.31	3.03	2.90	2.73	2.64	2.57
Both	2.83 (.84)	2.81 (.22)	3.45-2.31	3.08	2.96	2.80	2.67	2.58
4. AI	2.92 (.95)	2.90 (.17)	3.21-2.50	3.18	3.00	2.92	2.80	2.74
RF	2.97 (.94)	2.93 (.27)	3.54-2.21	3.25	3.09	2.98	2.83	2.64
Both	2.95 (.95)	2.92 (.22)	3.54-2.21	3.19	3.05	2.92	2.80	2.67
5. AI	2.95 (1.09)	2.96 (.35)	3.59-1.96	3.31	3.20	3.00	2.84	2.56
RF	2.98 (1.08)	2.90 (.37)	3.40-2.00	3.38	3.21	2.97	2.67	2.43
Both	2.96 (1.08)	2.93 (.36)	3.59-1.96	3.35	3.20	3.00	2.74	2.43
6. AI	2.49 (1.24)	2.49 (.36)	3.23-1.58	2.83	2.75	2.59	2.23	2.08
RF	2.52 (1.26)	2.45 (.42)	3.23-1.47	3.00	2.77	2.52	2.21	1.95
Both	2.51 (1.25)	2.47 (.39)	3.23-1.47	2.97	2.75	2.54	2.21	2.00
7. AI	3.22 (.78)	3.19 (.30)	3.93-2.54	3.47	3.37	3.25	3.05	2.76
RF	3.45 (.82)	3.17 (.51)	3.88-2.16	3.85	3.62	3.20	2.83	2.42
Both	3.33 (.81)	3.18 (.42)	3.93-2.16	3.74	3.43	3.23	2.87	2.65
8. AI	3.20 (.89)	3.21 (.34)	3.90-1.91	3.53	3.48	3.21	3.07	2.93
RF	3.23 (.96)	3.05 (.57)	3.75-1.32	3.60	3.50	3.17	2.85	2.24
Both	3.21 (.92)	3.13 (.48)	3.90-1.32	3.56	3.49	3.19	2.97	2.56
9. AI	2.88 (.99)	2.88 (.38)	3.58-2.00	3.41	3.20	2.90	2.60	2.47
RF	3.00 (1.01)	2.78 (.55)	3.43-1.32	3.38	3.25	2.88	2.62	1.92
Both	2.94 (1.00)	2.83 (.48)	3.58-1.32	3.38	3.21	2.89	2.60	2.08
10. AI	2.93 (1.01)	2.92 (.42)	3.60-1.50	3.42	3.20	2.96	2.76	2.34
RF	2.88 (1.06)	2.76 (.50)	3.54-1.68	3.29	3.14	2.85	2.57	1.88
Both	2.91 (1.03)	2.84 (.47)	3.60-1.50	3.29	3.16	2.94	2.62	2.32
11. AI	3.28 (.79)	3.28 (.40)	3.83-2.14	3.70	3.58	3.33	3.12	2.76
RF	3.44 (.76)	3.40 (.52)	4.00-0.76	3.76	3.71	3.54	3.32	3.00
Both	3.36 (.78)	3.34 (.46)	4.00-0.76	3.74	3.64	3.44	3.21	2.89
12. AI	3.18 (.82)	3.19 (.27)	3.69-2.54	3.51	3.41	3.18	3.02	2.79
RF	3.16 (.85)	3.06 (.40)	3.69-1.85	3.57	3.40	3.08	2.83	2.70
Both	3.17 (.84)	3.12 (.34)	3.69-1.85	3.56	3.39	3.13	2.92	2.74
13. AI	2.88 (.98)	2.87 (.39)	3.51-1.89	3.44	3.10	2.85	2.68	2.39
RF	3.04 (.97)	2.86 (.44)	3.54-1.95	3.43	3.33	2.94	2.51	2.35
Both	2.96 (.98)	2.86 (.41)	3.54-1.89	3.40	3.15	2.93	2.56	2.35
14. AI	3.33 (.78)	3.33 (.30)	3.83-2.32	3.62	3.54	3.42	3.22	3.05
RF	3.52 (.73)	3.38 (.40)	3.90-2.41	3.78	3.69	3.50	3.20	2.88
Both	3.42 (.76)	3.36 (.35)	3.90-2.32	3.71	3.62	3.42	3.20	2.88

Ques. No. & Type of Instructor	Overall Mean & (Std. Dev.)		Range of Instructor Means	Mean Rating for				
	Weighted by No. of Students Rating Each Instructor	Unweighted		90th %ile	75th %ile	50th %ile	25th %ile	10th %ile
15. AI	1.43 (.98)	1.44 (.38)	2.41-0.61	2.00	1.61	1.37	1.19	1.06
RF	1.48 (1.01)	1.57 (.51)	3.25-0.83	2.21	1.89	1.50	1.23	1.02
Both	1.45 (1.00)	1.51 (.45)	3.25-0.61	2.15	1.74	1.44	1.20	1.04
16. AI	1.17 (.77)	1.17 (.16)	1.58-0.90	1.42	1.23	1.16	1.05	0.97
RF	1.17 (.78)	1.15 (.25)	1.72-0.50	1.48	1.33	1.16	1.04	0.87
Both	1.17 (.77)	1.16 (.21)	1.72-0.50	1.42	1.29	1.16	1.04	0.92
17. AI	2.81 (1.03)	2.80 (.63)	3.49-1.04	3.37	3.26	3.01	2.63	1.85
RF	3.15 (.89)	2.98 (.40)	3.62-2.20	3.44	3.34	3.12	2.73	2.44
Both	2.98 (.98)	2.89 (.53)	3.62-1.04	3.40	3.28	3.01	2.65	2.28
18. AI	2.92 (.86)	2.92 (.31)	3.39-2.17	3.30	3.15	2.95	2.77	2.50
RF	2.93 (.95)	2.89 (.34)	3.54-2.10	3.32	3.16	2.94	2.71	2.50
Both	2.92 (.90)	2.90 (.33)	3.54-2.10	3.30	3.14	2.90	2.74	2.50
19. AI	3.25 (.76)	3.25 (.24)	3.58-2.18	3.48	3.42	3.31	3.16	3.08
RF	3.18 (.79)	3.18 (.28)	3.60-2.47	3.53	3.41	3.17	3.00	2.83
Both	3.22 (.78)	3.21 (.26)	3.60-2.18	3.51	3.40	3.21	3.11	2.96
20. AI	3.03 (.91)	3.04 (.33)	3.57-2.13	3.40	3.27	3.06	2.88	2.60
RF	3.28 (.80)	3.18 (.32)	3.77-2.39	3.54	3.43	3.26	3.08	3.76
Both	3.15 (.87)	3.11 (.33)	3.77-2.13	3.48	3.33	3.17	2.90	2.65
21. AI	2.82 (.89)	2.82 (.30)	3.45-1.82	3.21	3.05	2.81	2.63	2.56
RF	2.70 (.96)	2.69 (.34)	3.16-1.69	3.13	2.97	2.76	2.50	2.20
Both	2.76 (.93)	2.75 (.32)	3.45-1.69	3.13	2.98	2.78	2.58	2.40
22. AI	3.37 (.74)	3.38 (.22)	3.75-2.84	3.67	3.54	3.37	3.27	3.10
RF	3.17 (.82)	3.23 (.33)	3.70-2.26	3.64	3.52	3.24	3.08	2.82
Both	3.28 (.78)	3.30 (.29)	3.75-2.26	3.64	3.54	3.35	3.16	2.92
23. AI	1.77 (.94)	1.75 (.34)	2.21-1.39	2.10	1.96	1.76	1.67	1.56
RF	1.63 (.94)	1.69 (.27)	2.64-1.15	2.00	1.83	1.71	1.51	1.41
Both	1.70 (.94)	1.72 (.31)	2.64-1.15	2.03	1.89	1.74	1.57	1.44
24. AI	3.06 (.77)	3.07 (.27)	3.54-2.41	3.40	3.30	3.13	2.85	2.77
RF	2.99 (.86)	2.88 (.47)	3.43-1.18	3.37	3.19	2.97	2.81	2.45
Both	3.03 (.81)	2.98 (.39)	3.54-1.18	3.38	3.25	3.04	2.84	2.53
25. AI	1.70 (1.02)	1.72 (.33)	2.37-0.98	2.12	1.95	1.79	1.55	1.23
RF	1.77 (1.04)	1.73 (.36)	2.42-0.81	2.21	1.95	1.84	1.54	1.24
Both	1.73 (1.03)	1.73 (.35)	2.42-0.81	2.15	1.95	1.82	1.54	1.23
26. AI	2.88 (1.03)	2.86 (.51)	3.81-1.64	3.35	3.22	3.06	2.56	2.07
RF	3.18 (1.00)	2.93 (.55)	3.68-1.51	3.60	3.38	3.06	2.50	2.16
Both	3.02 (1.02)	2.89 (.53)	3.81-1.51	3.46	3.27	3.06	2.53	2.08
27. AI	2.95 (1.24)	2.93 (.59)	3.87-1.11	3.61	3.32	3.06	2.64	2.17
RF	3.10 (1.22)	2.85 (.66)	3.63-1.18	3.62	3.48	2.88	2.42	2.10
Both	3.02 (1.23)	2.89 (.63)	3.87-1.11	3.61	3.40	3.06	2.53	2.10
29. AI	3.44 (.67)	3.44 (.16)	3.73-3.06	3.67	3.56	3.42	3.35	3.29
RF	3.53 (.60)	3.48 (.20)	4.00-3.06	3.69	3.60	3.47	3.34	3.29
Both	3.49 (.64)	3.46 (.18)	4.00-3.06	3.67	3.58	3.45	3.34	3.29
30. AI	2.99 (.80)	3.01 (.18)	3.31-2.55	3.27	3.16	3.00	2.88	2.82
RF	3.13 (.77)	3.09 (.23)	3.53-2.59	3.40	3.26	3.10	3.00	2.77
Both	3.06 (.79)	3.05 (.21)	3.53-2.55	3.31	3.20	3.06	2.92	2.78

Ques. No. & Type of Instructor	Overall Mean & (Std. Dev.)		Range of Instructor Means	Mean Rating for				
	Weighted by No. of Students Rating Each Instructor	Unweighted		90th %ile	75th %ile	50th %ile	25th %ile	10th %ile
31. AI	2.88 (.81)	2.88 (.27)	3.38-1.93	3.15	3.11	2.93	2.74	2.59
RF	3.01 (.82)	2.97 (.30)	3.50-2.31	3.35	3.17	3.03	2.83	2.72
Both	2.95 (.81)	2.93 (.29)	3.50-1.93	3.26	3.13	2.97	2.80	2.63
32. AI	2.75 (1.01)	2.86 (.32)	3.63-2.28	3.36	3.11	2.83	2.64	2.46
RF	2.42 (1.13)	2.80 (.53)	3.83-1.46	3.40	3.29	2.82	2.63	2.12
Both	2.61 (1.08)	2.83 (.44)	3.83-1.46	3.36	3.13	2.82	2.63	2.32
33. AI	2.71 (.86)	2.75 (.26)	3.34-1.75	3.03	2.89	2.79	2.64	2.55
RF	2.67 (.89)	2.77 (.31)	3.58-2.09	3.11	2.95	2.82	2.65	2.24
Both	2.69 (.87)	2.76 (.29)	3.58-1.75	3.06	2.89	2.79	2.64	2.49
34. AI	2.42 (1.16)	2.39 (.44)	3.24-1.40	2.98	2.82	2.32	2.07	1.94
RF	2.52 (1.12)	2.49 (.53)	3.58-0.84	3.18	2.87	2.55	2.29	1.86
Both	2.47 (1.15)	2.44 (.49)	3.58-0.84	3.00	2.82	2.42	2.12	1.93
35. AI	1.90 (1.05)	1.91 (.31)	2.61-1.40	2.50	2.12	1.85	1.69	1.60
RF	2.15 (1.06)	2.11 (.42)	3.29-1.13	2.71	2.40	2.10	1.83	1.64
Both	2.01 (1.06)	2.01 (.38)	3.29-1.13	2.53	2.22	1.97	1.74	1.63
36. AI	2.84 (.97)	2.84 (.35)	3.41-1.81	3.20	3.14	2.87	2.69	2.52
RF	2.86 (.97)	2.83 (.36)	3.64-2.03	3.24	3.08	2.88	2.67	2.50
Both	2.85 (.97)	2.85 (.36)	3.64-1.81	3.21	3.07	2.87	2.67	2.50
37. AI	2.10 (1.13)	2.12 (.32)	2.78-1.47	2.54	2.33	2.20	1.92	1.64
RF	2.14 (1.17)	2.12 (.34)	2.91-1.24	2.53	2.37	2.11	1.88	1.69
Both	2.12 (1.15)	2.12 (.33)	2.91-1.24	2.53	2.33	2.16	1.88	1.64
38. AI	2.28 (.97)	2.25 (.38)	3.04-1.41	2.64	2.56	2.17	2.03	1.81
RF	2.35 (.91)	2.29 (.46)	3.18-0.79	3.00	2.55	2.32	2.16	1.80
Both	2.31 (.95)	2.27 (.42)	3.18-0.79	2.92	2.53	2.29	2.04	1.80
39. AI	2.04 (.82)	2.06 (.36)	2.61-1.57	2.39	2.16	2.07	1.88	1.68
RF	2.20 (.85)	2.13 (.37)	3.23-1.43	2.43	2.33	2.20	1.88	1.69
Both	2.11 (.84)	2.09 (.37)	3.23-1.43	2.39	2.30	2.07	1.88	1.68

Table 11

Eight-Term Array of E103 Students' Mean Scores on Common MC Final by Instructors

Fall Terms											
	71-72			72-73			73-74			74-75	
Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.
76.56	122	RF 76	71.24	51	RF 81	76.49	97	AI 23	71.82	72	AI 33
75.74	46	AI 06	70.49	130	RF 76	75.05	59	RF 61	70.67	81	AI 26
75.72	42	AI 05	69.75	90	AI 11	73.82	112	AI 25	70.05	128	RF 68
75.50	96	AI 15	69.35	78	AI 13	72.93	108	AI 20	69.15	113	AI 30
71.37	120	AI 10	69.16	100	AI 05	72.69	99	AI 21	68.90	83	AI 20
71.08	52	RF 77	69.06	89	AI 18	72.54	118	AI 09	66.82	83	AI 32
70.82	119	AI 13	68.65	108	AI 09	71.65	104	AI 22	66.62	94	RF 82
69.85	289	RF 68	68.33	24	RF 75	70.06	109	AI 26	66.32	107	AI 21
69.39	66	RF 81	68.13	47	RF 62	69.14	35	RF 74	65.74	103	AI 31
68.91	83	AI 04	68.12	139	RF 68	68.63	114	AI 24	64.83	48	RF 65
68.65	55	RF 65	65.27	51	RF 74	67.89	108	AI 02	64.32	50	RF 67
68.09	46	RF 61	64.67	40	RF 73	66.93	56	RF 65	64.00	79	RF 85
60.87	55	RF 78	64.30	50	AI 07	64.98	61	RF 77	63.52	88	AI 29
			61.87	30	AI 02	64.00	58	RF 67	63.04	58	RF 69
			60.35	57	RF 67				61.45	47	AI 27
			59.84	50	RF 77				60.54	143	AI 24
									60.23	53	RF 61
										73	RF 81
72.39	505	AI Total	68.37	545	AI Total	71.79	969	AI Total	66.28	920	AI Total
70.16	686	RF Total	66.98	589	RF Total	67.93	269	RF Total	65.62	583	RF Total
71.10	1191	Course Tot.	67.65	1134	Course Tot.	70.95	1238	Course Tot.	66.04	1503	Course Tot.
KR = .69			KR = .67			KR = .69			KR = .65		

Spring Terms

71-72			72-73			73-74			74-75		
Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.
77.20	133	RF 76	75.30	270	RF 76	77.70	319	RF 76	76.14	322	RF 76
75.58	171	RF 68	72.85	52	RF 74	74.84	76	RF 74	72.90	69	AI 34
72.23	35	AI 08	71.12	114	AI 13	74.54	57	RF 68	70.84	69	RF 86
71.58	134	AI 13	68.75	51	RF 67	72.37	67	RF 83	70.54	140	AI 24
			66.32	92	AI 10	69.82	70	AI 27	67.58	125	RF 84
			63.43	35	RF 72	69.30	141	AI 02	65.33	129	AI 28
						69.22	60	RF 67			
						67.17	29	RF 82			
71.72	169	AI Total	68.97	206	AI Total	69.48	211	AI Total	69.08	338	AI Total
76.29	304	RF Total	73.15	408	RF Total	75.12	608	RF Total	73.36	516	RF Total
74.66	473	Course Tot.	71.75	614	Course Tot.	73.72	819	Course Tot.	71.67	854	Course Tot.
KR = .66			KR = .73			KR = .73			KR = .70		

Table 12
Eight-Term Array of E104 Students' Mean Scores on Common MC Final by Instructors

Fall Terms

71-72			72-73			73-74			74-75		
Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.	Mean Score (%)	No. of Students	AI or RF ID No.
74.81	31	AI 17	70.17	52	RF 69	72.09	90	AI 18	69.02	299	RF 76
73.87	199	RF 76	68.02	56	RF 66	70.97	298	RF 76	67.31	128	AI 18
64.57	30	RF 71	67.38	183	RF 76	70.38	45	RF 70	63.90	44	RF 71
			65.49	35	RF 63	64.84	67	RF 69	62.60	43	AI 28
			60.15	34	RF 61	54.15	82	AI 19	60.16	53	RF 84
			59.61	18	RF 71				59.15	76	RF 73
74.81	31	AI Total				63.53	172	AI Total	66.14	171	AI Total
72.65	229	RF Total	66.66	377	RF Total	69.90	410	RF Total	66.06	472	RF Total
72.91	260	Course Tot.	66.66	377	Course Tot.	68.02	582	Course Tot.	66.08	643	Course Tot.
KR = .73			KR = .78			KR = .73			KR = .73		

Spring Terms

Mean Score (%)	71-72 No. of Students	AI or RF ID No.	Mean Score (%)	72-73 No. of Students	AI or RF ID No.	Mean Score (%)	73-74 No. of Students	AI or RF ID No.	Mean Score (%)	74-75 No. of Students	AI or RF ID No.
71.55	90	AI 17	76.32	74	AI 11	72.16	55	AI 22	71.15	121	AI 18
69.87	16	RF 79	75.51	57	AI 03	69.08	98	AI 21	69.44	116	AI 26
68.94	246	RF 76	73.83	116	AI 18	68.43	65	AI 20	69.30	120	AI 30
65.91	54	RF 69	72.74	38	RF 70	67.96	98	AI 23	68.70	65	AI 33
65.68	19	AI 06	72.00	27	AI 07	67.93	126	AI 09	66.44	42	RF 71
64.16	45	RF 66	69.89	57	AI 02	66.80	93	AI 25	66.38	96	AI 32
62.91	23	AI 15	69.71	115	AI 09	65.70	41	AI 18	65.66	112	AI 20
59.59	105	AI 05	69.69	52	RF 62	65.11	119	AI 24	64.52	126	AI 21
58.50	48	AI 04	68.84	19	RF 64	64.98	41	RF 61	63.05	72	RF 65
58.22	45	RF 65	67.24	45	AI 67	64.63	56	AI 26	62.67	35	RF 80
58.00	7	RF 71	67.07	60	AI 05	64.28	60	RF 79	60.47	43	AI 29
57.22	96	AI 10	66.91	33	RF 71	60.62	29	RF 69	60.05	109	AI 27
57.16	31	RF 61	66.80	40	RF 80	59.39	115	AI 19			
53.27	30	AI 78	65.16	55	RF 66						
52.56	61	RF 81	64.68	71	RF 81						
			58.00	12	RF 61						
62.18	381	AI Total	72.17	506	AI Total	66.44	866	AI Total	66.56	908	AI Total
63.79	535	RF Total	67.05	365	RF Total	63.74	193	RF Total	63.97	232	RF Total
63.12	916	Course Tot.	69.99	871	Course Tot.	66.09	1059	Course Tot.	66.21	1140	Course Tot.
KR = .77			KR = .70			KR = .69			KR = .68		

Table 13
Five E103 Regressions with Scaled MC Final Exam Score as the Dependent Variable
(5,000 Students over 8 Terms)

Independent Variable and (Code)	Mean	No. 1	No. 2	No. 3	No. 4	No. 5
		Regression Coefficients In Each Regression[1]				
Total SAT, hundreds (16.0-4.0)	9.857	1.98††	1.99††	1.98††	1.99††	1.98††
Male sex (1-0)	.680	1.66††	1.66††	1.63††	1.63††	1.63††
Three (not two) class meetings a week (1-0)	.775	.93††	.85††	.94††	1.14††	.92††
Class met on Saturday (1-0)	.012	1.15	1.08	1.09	1.25	1.07
Class met before 9 A.M. (1-0)	.160	– .08	– .16	– .07	– .01	– .09
Class met after 4 P.M. (1-0)	.023	–1.36	–1.43	–1.28	–1.52	–1.33
*Class standing: Fresh. (1-0)	.264	– .63	– .66	– .72	– .67	– .69
Junior (1-0)	.136	.18	.17	.11	.16	.13
Senior (1-0)	.045	1.12	1.10	1.09	1.03	1.09
Other (1-0)	.003	8.04††	8.27††	8.04††	8.24††	8.17††
**School: Univ. Div. (1-0)	.422	– .63	– .64	– .58	– .57	– .59
Arts & Sci. (1-0)	.205	.98†	.94†	.97†	1.03†	.97†
Education (1-0)	.050	.52	.46	.53	.50	.52
HPER (1-0)	.018	–3.04††	–3.08††	–3.15††	–3.08††	–3.16††
Other (1-0)	.010	–1.19	–1.16	–1.23	–1.11	–1.22
Took course on a required basis (1-0)	.750	– .70†	– .72†	– .73†	– .76†	– .73†
Attitude toward econ. at beginning of course (4-0)	2.926	.38††	.46††	.44††	.45††	.44††
Individual students' instr. rat. (4-0)	2.824	.96††				
***Section mean instructor rating (3.68-0.93)	2.821		1.35††			
***Sect. mean instr. rat. 3.00>(1-0)	.444			1.39††		1.30††
***Sect. mean instr. rat. <2.00 (1-0)	.113				–1.07††	– .47
Intercept		26.18	24.90	28.14	28.57	28.23
R^2 adjusted		.2089	.2056	.2032	.1999	.2034

*Class standing of sophomore suppressed in the intercept in all regressions.
**School of business suppressed in the intercept in all regressions.
***Section mean ratings <2.99 suppressed in the intercept in the third regression.
Section mean ratings >2.01 suppressed in the intercept in the fourth regression.
Section mean ratings 2.01-2.99 suppressed in the intercept in the fifth regression.

[1] Statistically Significant at: .05 = †, .01 = ††.

Table 14
Five E104 Regressions with Scaled MC Final Exam Score as the Dependent Variable
(3,895 Students over 8 Terms)

Independent Variable and (Code)	Mean	Regression Coefficients in Each Regression[1]				
		No. 1	No. 2	No. 3	No. 4	No. 5
Total SAT, hundreds (16.0-4.0)	9.935	1.47††	1.49††	1.49††	1.48††	1.49††
Male sex (1-0)	.717	2.03††	2.03††	2.03††	2.01††	2.03††
Three (not two) class meetings a week (1-0)	.839	3.12††	3.09††	3.19††	3.39††	3.15††
Class met on Saturday (1-0)	.008	− .94	− .90	−1.04	− .74	−1.03
Class met before 9 A.M. (1-0)	.067	− .46	− .42	− .32	− .52	− .31
Class met after 4 P.M. (1-0)	.017	2.62	2.70†	2.74†	2.90†	2.74†
*Class standing: Fresh. (1-0)	.142	− .88	− .86	− .90	− .88	− .90
Junior (1-0)	.182	.57	.65	.65	.70	.64
Senior (1-0)	.068	.52	.61	.58	.64	.58
Other (1-0)	.005	.77	.40	.35	.47	.30
**School: Univ. Div. (1-0)	.291	− .70	− .68	− .68	− .68	− .68
Arts & Sci. (1-0)	.199	1.07†	1.01	1.01†	1.03†	1.02†
Education (1-0)	.033	−1.44	−1.43	−1.47	−1.33	−1.43
HPER (1-0)	.006	−4.39†	−4.27†	−4.31†	−4.28†	−4.28†
Other (1-0)	.005	−2.83	−2.99	−3.06	−3.03	−3.03
Took course on a required basis (1-0)	.810	− .38	− .36	− .35	− .35	− .35
Attitude toward econ. at beginning of course (4-0)	2.945	.83††	.86††	.85††	.88††	.85††
Individual students' instr. rat. (4-0)	2.997	.69††				
***Section mean instructor rating (3.81-1.51)	3.018		.76††			
***Sect. mean instr. rat. 3.00>(1-0)	.621			.88†		.80†
***Sect. mean instr. rat. <2.00 (1-0)	.054				−1.10	− .66
Intercept		27.27	26.79	28.43	28.83	28.57
R^2 adjusted		.1404	.1376	.1376	.1367	.1378

*Class standing of sophomore suppressed in the intercept in all regressions.
**School of business suppressed in the intercept in all regressions.
***Section mean ratings <2.99 suppressed in the intercept in the third regression.
Section mean ratings >2.01 suppressed in the intercept in the fourth regression.
Section mean ratings 2.01-2.99 suppressed in the intercept in the fifth regression.

[1] Statistically Significant at: .05 = †, .01 = ††.

Table 15
E103 and E104 Regressions with Instructor Rating as the Dependent Variable

Independent Variable and (Code)	Regression Coefficients[1]	
	E103	E104
Total SAT, hundreds (16.0-4.0)	−.04††	.00
Male sex (1-0)	−.08††	−.08††
Three (not two) class meetings a week (1-0)	.31††	.56††
Class met on Saturday (1-0)	.23	.47††
Class met before 9 A.M. (1-0)	.20††	−.18††
Class met after 4 P.M. (1-0)	−.04	.37††
*Class standing: Fresh. (1-0)	−.10†	.00
Junior (1-0)	−.09	.22††
Senior (1-0)	−.14	.21††
Other (1-0)	−.19	−.27
**School: Univ. Div. (1-0)	.15††	.06
Arts & Sci. (1-0)	.04	−.13††
Education (1-0)	.03	.12
HPER (1-0)	.10	.16
Other (1-0)	.15	−.37
Took course on a required basis (1-0)	−.05	.03
Attitude toward econ. at beginning of course (4-0)	.05††	.05††
Expected grade (4-0)	.31††	.28††
"t" score on final exam, tens (7.2-0.9)	.04††	.00
Intercept	1.82	1.63
R^2 adjusted	.086	.097

[1] Statistically Significant at: .05 = †, .01 = ††.

*Class standing of sophomore suppressed in the intercept in both regressions.
**School of Business suppressed in the intercept of both regressions.

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APPENDIX I
Introductory Economics Schedule, Fall 1974
E 103

Introduction to Microeconomics

Sec. No.	Days	Time	Subtitles	Room	Instructor
1900	MWF	7:30	Competition & Government	BH 142	Atack, J.
1901	MWF	8:30	Current Economic Problems	BH 142	Green, J.
*1902	MWF	8:30	Current Economic Problems	BH 310	Walton, G.
1903	MWF	9:30	Current Economic Problems	BH 209	Praemer, A.
1904	MWF	9:30	Competition & Government	BH 142	Atack, J.
1905	MWF	9:30	Environmental Econ. Probs.	BH 107	Campbell, R.
1906	MWF	9:30	Agricultural Econ. Probs.	BH 340	Brust, P.
1907	TR	9:30-10:45	Nutrition and the Consumer	BH 206	Bachmura, F.
1908	MWF	10:30	Current Economic Problems	BH 206	McKinney, J.
1909	MWF	10:30	Current Economic Problems	BH 142	Praemer, A.
1910	MWF	10:30	Environmental Econ. Probs.	BH 240	McKinney, S.
1911	MWF	10:30	Gov't. and the Economy	BH 103	Loescher, S.
1912	TR	11:00-12:15	Scarcity & Interdependence	BH 240	Witte, J.
1913	TR	11:00-12:15	Economics of Education	BH 142	Dewitt, N.
1914	MWF	11:30	Income Distribution in U.S.	BH 142	Chapman, E.
1915	MWF	11:30	Environmental Econ. Probs.	BH 240	McKinney, S.
1916	MWF	11:30	Current Economic Problems	BH 209	McKinney, J.
1917	MWF	12:30	Income Distribution in US	BH 142	Chapman, E.
1918	MWF	12:30	Agricultural Econ. Probs.	BH 209	Brust, P.
1919	MWF	12:30	Social Issues and Econ.	BH 206	Wrage, P.
1920	MWF	12:30	Environmental Econ. Probs.	BH 240	Davidson, J.
*1921	TR	1:00-2:15	Government & Economy	SW 007	Gordon, S.
1922	MWF	1:30	Social Issues & Econ.	BH 206	Wrage, P.
1923	MWF	1:30	Environmental Econ. Probs.	BH 240	Davidson, J.
1924	MWF	1:30	Current Econ. Probs.	BH 142	Rezelmann, J.
1925	MWF	2:30	Current Econ. Probs.	BH 142	Rezelmann, J.
1926	TR	2:30-3:45	Current Econ. Probs.	BH 142	Hashemi, A.
1927	TR	6:30-7:45	Current Econ. Probs.	BH 142	Hashemi, A.

*These sections are large lecture sections.

E103 FINAL—TUESDAY, DECEMBER 17, 7:30-9:15 a.m.

E 104

Introduction to Macroeconomics

Sec. No.	Days	Time	Subtitles	Room	Instructor
1928	MWF	8:30	Inflation & Unemployment	BH 240	Weiher, K.
1929	MWF	9:30	Inflation & Unemployment	WH 118	Weiher, K.
1930	MWF	10:30	Current Economic Probs.	WH 118	Orr, L.
1931	TR	11:00-12:15	Current Economic Probs.	BH 006	Kuznets, P.
*1932	MWF	11:30	Unempl., Inflation & Growth	BH 013	Saunders, P.
1933	MWF	12:30	Monetary & Fiscal Policy	BH 003	Lardero, L.
1934	TR	1:00-2:15	Current Economic Probs.	BH 003	Yoho, D.
1935	MWF	1:30	Monetary & Fiscal Policy	BH 003	Lardero, L.

*This section is a large lecture section.

E104 FINAL—TUESDAY, DECEMBER 17, 11:30-1:15 p.m.

APPENDIX II

Introductory Economics Schedule, Spring 1975

E 103

Introduction to Microeconomics

Sec. No.	Days	Time	Subtitles	Room	Instructor
1917	MWF	8:30	Current Economic Problems	BH 310	Christiansen, R.
*1918	MWF	9:30	Current Economic Problems	BH 013	Saunders, P.
1919	MWF	10:30	Environm. Economic Problems	PY 109	McKinney, S.
1920	MWF	10:30	Government and the Economy	BH 003	Miller, T.
1921	TR	11:00-12:15	Economics of Education	BH 003	Yoho, D.
1922	MWF	11:30	Environm. Econ. Probs.	BH 003	McKinney, S.
1923	MWF	12:30	Income Distribution	WH 118	Lardaro, L.
1924	TR	1:00-2:15	Economics of Education	BH 142	Yoho, D.
1925	MWF	1:30	Income Distribution	WH 118	Lardaro, L.

*This section is a large lecture section

E 103 FINAL—WEDNESDAY, MAY 7, 3:30-5:15 p.m.

E 104

Introduction to Macroeconomics

Sec. No.	Days	Time	Subtitles	Room	Instructor
1892	MWF	7:30	Inflation, Empl. & Money	BH 231	Atack, J.
1893	MWF	8:30	Inflation and Unemployment	BH 006	Weiher, K.
1894	MWF	8:30	Inflation, Empl. & Money	BH 142	Atack, J.
1895	MWF	9:30	Inflation and Unemployment	BH 003	Campbell, R.
1896	MWF	9:30	Inflation and Unemployment	BH 103	Weiher, K.
1897	MWF	9:30	Unempl., Inflation & Controls	BH 142	Wrage, P.
1900	MWF	10:30	Monetary and Fiscal Policy	WH 115	Praemer, A.
1901	MWF	10:30	Inflation and Unemployment	GL 101	Chapman, E.
1902	MWF	10:30	Unempl., Inflation & Controls	BH 340	Wrage, P.
1903	TR	11:00-12:15	Elementary Macro Theory	BH 304	Witte, J.
1905	MWF	11:30	Monetary and Fiscal Policy	WH 115	Praemer, A.
1906	MWF	11:30	Inflation and Unemployment	GL 101	Chapman, E.
1908	MWF	12:30	Current Economic Problems	LH 316	Davidson, J.
1909	MWF	12:30	Monetary and Economic Policy	BH 142	Brust, P.
*7095	TR	1:00-2:15	The End of Affluence?	PY 101	Wilson, G.
1910	TR	1:00-2:15	Current Economic Problems	BH 209	Kuznets, P.
1911	MWF	1:30	Monetary and Fiscal Problems	BH 142	Rezelman, J.
1912	MWF	1:30	Monetary and Economic Policy	BH 346	Brust, P.
1913	MWF	1:30	Current Economic Problems	LH 316	Davidson, J.
1914	MWF	2:30	Monetary and Fiscal Policy	BH 142	Rezelman, J.
1915	TR	2:30-3:45	Monetary and Fiscal Policy	WH 124	Hashemi, A.
1916	TR	6:30-7:45	Monetary and Fiscal Policy	BH 347	Hashemi, A.

*This section is a large lecture section.

E 104 FINAL—WEDNESDAY, MAY 7, 11:30 a.m.-1:15 p.m.

APPENDIX III

E103 Introduction to Microeconomics: Current Economic Problems

Section 1918, MWF 9:30 a.m. BH 013

Dr. Phillip Saunders
Ballantine Hall 913
Office Hours MWF 10:30 a.m. - 12:30 p.m.
Or by Appointment (337-4050 Mornings)
(337-2761 Afternoons)

Spring 1975, Undergraduate Interns, BH908

Robyn Moberly	Tu 1:30
Marc Newton	W 1:30
Pam Whalley	Th 1:30

Major Course Objectives

1. To stimulate in students an awareness of, and a continuing interest in, important problems of economic policy. The kind of policy problems one encounters daily in the newspapers and news magazines.
2. To give students a firm grasp of the *few* basic principles and analytical tools they need in order to think intelligently about economic problems. Where necessary, technical theoretical detail will be sacrificed in order to obtain proficiency in the use of the basic tool kit; but the student is expected to master thoroughly the basic analytical concepts of scarcity, alternative costs, competitive market pricing, and interdependence. The basic assumption is that analytical concepts, tools and models are most effectively learned when the student can use them in understanding actual situations and problems that he or she is likely to encounter in the real world.
3. To help students to develop good method in thinking about economic problems. This involves specific attention to the process of orderly problem-solving, including the recognition of different values and the problem of conflicting goals. (See Fels and Uhler *Casebook*, pp. 18-29, and pp. 34-45.)
4. To help students to learn to evaluate and use both qualitative and quantitative evidence when conflicting viewpoints and approaches are encountered.

Operating This Section of the Course

This section will emphasize applying the tools in the basic analytical core to a variety of current economic policy problems including campus parking places, medical care services, excise taxes, price controls, the volunteer army, pollution, tax reform, poverty, and others.

There will be several homework assignments, four one-hour exams, and a final exam that will consist of a series of multiple-choice questions, common to all students in all sections of E103, and one or two essay questions designed especially for this section. Note now the time of the common final exam—it is imperative that your schedule permit you to be free to take the final at *3:30 p.m. on Wednesday, May 7*.

All students are expected to do all the assigned reading and homework assignments promptly and thoroughly. No homework will be accepted later than the beginning of the class on the day when it is due, and all students are expected to take all exams on the dates they are scheduled. There are no provisions for make-up exams, but if a student has a *legitimate* excuse for missing a scheduled exam, the weight of his final will be increased enough to make up the points missed.

Grades

Course grades will be determined as follows:

Each one-hour exam is worth 100 points.

The final exam is worth 200 points.

Unless otherwise stated, each homework assignment collected will be graded on a 15-point basis. Each student will be permitted to drop his lowest homework grade, and the points on the remaining homework assignments will be added to his exam scores to get a total number of points for the whole course, and the official course grade will be based on this overall point total.

There is no curve for grading. The standards are absolute, and everyone can get an "A+" or everyone can get an "F," depending upon where their overall point total falls in the following percentage distribution:

95 percent and over	A+
90-94 percent	A
85-89 percent	A−
80-84 percent	B
75-79 percent	B−
70-74 percent	C+
65-69 percent	C
60-64 percent	C−
55-59 percent	D
50-54 percent	D−
49 percent or lower	F

Textbook and Readings

G. L. Bach, *Economics: An Introduction to Analysis and Policy* (8th edition). Prentice Hall, 1974.

Fels and Uhler, *Casebook of Economic Problems and Policies: Practice in Thinking*. West, 1974.

On reserve (Main Library 20 copies, Business Library 10 copies): E103 Saunders, *Readings on Markets and Prices*, and other readings that may be added later.

OPTIONAL: Students who want to keep up on daily economic events can get special subscription rates to *The Wall Street Journal*—3 months $5.40, 4 months $7.20, 8 months $14.40, 1 year $19.00. This is entirely optional. Any student wanting to subscribe should sign the list at the front of the room after class today, Wednesday 1-15, or Friday 1-17. Put your address on the list, and you will be billed directly by the *Journal*. The list will be mailed in Friday, so you must sign up by then. Again, this is entirely optional.

TENTATIVE COURSE OUTLINE

Date	Topic and Assignment
M 1-13	*Organization and Orientation* READ: Assignment sheet. Note *carefully* test dates, Saunders' office hours, and the names and office hours of the undergraduate interns. Get help before

the test, not after. Above all *keep up* with the daily assignments.

W 1-15	*The Basic Problem of Scarcity and the Important Notion of Alternative Costs* READ: Bach, Ch. 3, pp. 25-29. Homework Problem 1 and handouts 1 and 2 attached to assignment sheet. Note the homework problem and handouts require you to go beyond the material in the text. You must *understand* and be able to *apply* the material in this brief reading assignment. Just reading it, or even memorizing it, is not enough.
F 1-17 & M 1-20	*Efficiency and Equity* READ: Fels and Uhler, pp. 3 to middle of 11, and 18-29. Go over the cases carefully and be prepared to answer the questions at the end of each case in class. Class discussion will focus particularly on Cases 1, 3 and 4.
W 1-22 & F 1-24	*Economic Analysis and Economic Policy* READ: Bach, Chs. 1 & 2 (including appendix to Ch. 1 and case 1 at end of Ch. 2), pp. 3-24. Note Case 1 in the text, p. 24, has some points of similarity with case 2 in Fels & Uhler, pp. 23-25. Be prepared to discuss these cases in class.
M 1-27	*The Case of Airport Delays* READ: Fels and Uhler, pp. 34-47. Be prepared to answer the questions at the end of the case in class.
W 1-29	*Introduction to Markets and Prices* READ: Bach, Ch. 3, pp. 29-33, and in reserve folder labeled "E103 Saunders, Readings on Markets and Prices" reading 1 (Heilbroner), 3 (Radford) and 4 (Business Week).
F 1-31	*Market and Planning Mechanisms* Homework Problem 2. Try hard to get an internally consistent and economically efficient plan. Compare the invisible hand of a market-price mechanism with your visible hand as a central planner.
M 2-3	*The Costs and Benefits of College Education* Homework Problem 3 and handouts 3 and 4 attached to assignment sheet.
W 2-5	*Review for First Exam*
F 2-7	*First Exam on Scarcity, Alternative Costs, Organizing Economic Activity, and Economic Policy*
M 2-10	*Playing the Market Game* Special instructions will be given out for this class. A *very important* meeting that will lay the groundwork for subsequent classes.
W 2-12	*Go Over First Exam Results, Market Game Results, and Begin Building a Model of Demand and Supply to Determine Equilibrium Prices in Competitive Markets (Whew!)*

	Another important class! Handouts and homework problems will be distributed.
F 2-14	*Building a Model of Demand and Supply to Determine Equilibrium Prices in Competitive Markets, I* READ: Bach, Ch. 5, pp. 50-58, focus on the concept of *market demand,* and be prepared to hand in Homework Problem 4.
M 2-17	*Building a Model, etc., II* READ: Bach, Ch. 5, pp. 50-60, focus on "total revenue and elasticity" and be prepared to hand in Homework Problem 5.
W 2-19	*Building a Model, etc., III* READ: Bach, Ch. 6, pp. 64-67, focus on the concept of *long-run* market supply. Oh joy, note that no homework is due today!
F 2-21	*Building a Model, etc., IV* READ: Bach, Ch. 6, pp. 67-71, focus on the concepts of equilibrium price and equilibrium quantity, and be prepared to hand in Homework Problem 6.
M 2-24	*Review of Competitive Market Pricing* Homework Problem 7.
W 2-26	*Second Exam on the Mechanics of Demand, Supply, and Equilibrium Prices*
F 2-28	*Applying the Model to Medical Care Problems* Review Bach, Ch. 6, p. 70, and be prepared to hand in answer to Homework Problem 8.
M 3-3	*Go over Second Exam Results and start on Excise Taxes* READ: Bach, Ch. 6, box on p. 72 and look at Homework Problem 9.
W 3-5	*Applying the Model to Excise Tax Problems* Review Bach, Ch. 6, box on p. 72, and be prepared to hand in Homework Problem 9, which really tests if you can apply the model—and not just memorize the text.
F 3-7 & M 3-10	*Applying the Model to Price Ceilings and Price Floors* READ: Bach, Ch. 6, pp 71-76, including Case 3 on Consumer Credit and Usury Laws. Readings in Markets and Prices 5 (Morrison) and 6 (Bowen). Fels and Uhler, pp. 11-16, 32-33, 95-96, 127-130
W 3-12	*The Case of the All-Volunteer Army* READ: Fels and Uhler, pp. 52-71. Be prepared to hand in written answers to the first four questions on page 70 and be prepared to discuss the policy questions on page 71.

F 3-14	*Income Distribution in a Market Economy: Marginal Analysis and Pricing Factor Services* READ: Bach, Ch. 28, pp. 380-383 required. The rest of the chapter is optional. Homework Problem 10.
M 3-17	*The Case of Migrant Workers* READ: Fels and Uhler, pp. 48-51.
W 3-19	*Review for the Third Exam*
F 3-21	*Third Exam on All Material Covered to Date*
	HAPPY SPRING VACATION
M 3-31	*A Closer Look at "Costs"* READ: Bach, Ch. 19, pp. 255-264. Homework Problem 11. Pay particular attention to the notion of marginal cost—it's *very* important.
W 4-2 & F 4-4	*Profit Maximization and Applying Marginal Analysis* READ: Bach, Ch. 20, pp. 269-277, including Case 11, Homework Problem 12 on marginal revenue, and consider the case of Catfish Hunter. How can the New York Yankees (or anyone else) afford to pay one man over three million dollars just to play baseball and still hope to make any profit?
M 4-7	*Long Run Competitive Equilibrium* READ: Bach, Ch. 21, pp. 278-289.
W 4-9	*Monopoly* READ: Bach, Ch. 23, pp. 304-313, including Case 12. Homework Problem 13 and questions 11 and 12 from old exam.
F 4-11	*Government, Business, and the Public Interest* READ: Bach, Ch. 26, pp. 344-359, including Case 16.
M 4-14	*The Military Industrial Complex: A Case Study* READ: Bach, Ch. 27, pp. 360-367, including Case 17.
W 4-16	*Review for Fourth Exam*
F 4-18	*Fourth Exam on Material Since the Last Exam*
M 4-21	*Public Goods, Externalities, and the Public Sector* READ: Bach, Ch. 35, pp. 474-488, including Case 23.
W 4-23	*The Problem of Pollution I* READ: Bach, Ch. 36, pp. 489-497. An article by Larry Ruff entitled "The Economic Common Sense of Pollution" on reserve.

F 4-25	*The Problem of Pollution II* READ: Fels and Uhler, Cases 25 and 26, pp. 118-126.
M 4-28	*Taxes and Tax Reform* READ: Bach, Ch. 33, pp. 468-472 and Ch. 37, pp. 502-514; Fels and Uhler, Case 32, pp. 140-144, and some handouts to be passed out prior to this meeting.
W 4-30	*Poverty and Inequality* READ: Bach, Ch. 33, pp. 442-457, including Case 22.
F 5-2	*Review for Final Exam and Course and Instructor Evaluation* Attendance at this meeting is *mandatory*: Information about questions that might appear on the final will be discussed and distributed at this class meeting only; and at no other time. BRING A *PENCIL* TO CLASS WITH YOU ON 5-2.

FINAL, WEDNESDAY, MAY 7, 3:30 p.m.

Plan to attend, unless you can stand the alternative cost, i.e., anyone missing for any reason other than fatal illness will get a zero.

BRING A PENCIL TO THE FINAL WITH YOU ON 5-7.

APPENDIX IV
E103—Introduction to Microeconomics: Environmental Economic Problems

Fall 1974
Section 1905

Mr. Campbell
Office—BH 907
Office hours—MWF
10:15-noon and by appointment

Textbooks and readings

1. G. L. Bach, *Economics: An Introduction to Analysis and Policy.*
2. E. G. Dolan, *TANSTAAFL* (There ain't no such thing as a free lunch). Holt, Rinehart, Winston, 1971
3. There will also be some readings in items on reserve in the library.

Objectives of the Course

The goals of E103 are: (1) to stimulate in students an awareness of, and a continuing interest in, important problems of economic policy such as are encountered daily in the newspaper; (2) to give students a firm grasp of a limited number of central principles and analytical tools needed to think intelligently about economic problems—scarcity, opportunity costs, the functioning of markets, and interdependence; (3) to provide practice in using these tools in application to numerous real-world problems. In particular, the problem of environmental disruption will be used as a concrete problem to explore the conditions under which markets may fail to solve the economic problem optimally, and to illustrate how basic economic principles can guide us in effectively controlling pollution and environmental disruption. It is a problem which illustrates beautifully most of the central ideas of economics, and we will spend a considerable amount of time on it.

Work of the Course

There will be numerous small quizzes and problems during the semester, and *these will be of equal weight with the final in determining your course grade.* Late work will be penalized. There will be no regular midterm. There will be a departmental final on Tuesday, December 17, 7:30-9:15 a.m. consisting half of multiple-choice questions common to all sections of E103, with the other half an essay part made up and graded by myself.

Skeleton Outline

Week 1 Aug 26-30	Scarcity—the economic problem—opportunity cost—interdependence. Economics as a science. Bach, Chapters 1,2, and pp. 499-501.
Week 2 Sept 2-6 and Week 3 Sept 9-13	Solving the economic problem by markets. Ditto by planning. Actors, sectors, classification of markets. Supply and demand analysis. Bach, Chapters 3, 4, 5, 6.

Week 4 Sept 16-20	Ecology and economics. Environmental disruption. Externalities and market failure. Bach, Chapter 35, 36. TANSTAAFL, Chapters 1-3.
Week 5 Sept 23-27 and Week 6 Sept 30-Oct 4	Business firms' behavior. Functioning of competitive, monopolistic, and oligopolistic markets. Government control. Bach, Chapters 19-26 except 22.
Week 7 Oct 7-11	Catch up and flexibility.
Week 8 Oct 14-18 and Week 9 Oct 21-25	How income is distributed. The markets for productive services. Wages, rent, interest, profits. Bach, Chapters 28, 29, 31, 32.
Week 10 Oct 28-Nov 1	Public Policy and income distribution. Bach, Chapters 30, 33, 37.
Week 11 Nov 4-8	Catch up and flexibility.

Beginning with Week 12, we will return to the analysis of environmental problems, their causes, and proposed measures for handling them. For this part of the course we will finish the TANSTAAFL book, and do additional reading in materials on reserve in the library. These will include

- Commoner, *The Closing Circle*
- Dorfman and Dorfman, *Economics of the Environment*
- L. E. Ruff, *The Economic Common Sense of Pollution*
- Goldman, *The Spoils of Progress*
- Crocker and Rogers, *Environmental Economics*

I also expect to ask you to do a book report on certain of these materials to be handed in just before the last week of class.

Week 16 will be reserved for general discussion and review.

TUESDAY, DECEMBER 17, 7:30 AM, DEPARTMENTAL FINAL EXAMINATION

APPENDIX V

E103—Introduction to Microeconomics: Income Distribution

Sections 1933 and 1935

Len Lardaro
MH 315, 337-8580
Office Hours: MW 9:30-11:15

Textbooks

Spencer, *Contemporary Microeconomics*
A. Batchelder, *The Economics of Poverty* (2nd ed.)
Samuelson, *Readings in Economics* (7th ed.)

Schedule

I. *Introduction to Economics*

The Meaning of Economics. Scarcity and the necessity of choice. What, How, and for Whom. Micro vs. Macro. The role of the Economist. Economic models and theories. *Ceterus Paribus*. Limitations of models. Common logical fallacies to avoid.

Spencer: Chapters 1 and 2
Samuelson: Readings 1 and 2.

II. *Production Possibilities*

The nature of the choice. Opportunity cost. "You have to give up something to get something." Diminishing returns. Guns and butter. Malthus. Demographic Transition.

Spencer, Chapter 2.
Samuelson, Readings 3 and 4.

III. *Economic Systems*

The Factors of Production. The resource endowment and technology. Limited resources vs. unlimited human wants—an alternative definition of scarcity. What, How and for Whom revisited. The Invisible Hand. Capitalism, the market system and our mixed economy. The role of price. A brief look at the role of government.

Spencer, Chapters 3 and 5 and pp. 99-104.
Samuelson, Readings 5, 6, 7, 17, 74 and 75.

IV. *Basic Supply and Demand Analysis I*

Utility and the demand for goods and services. Diminishing marginal utility. The budget constraint and utility maximization.

Spencer, pp. 357-362.

V. *Basic Supply and Demand Analysis II*
What is demand? The law of demand and the demand curve. Demand price. What is supply? Supply curve. Supply price. The market mechanism. The nature of equilibrium. Equilibrium price and stability. Shifts in the demand curve. Shifts in the supply curve. Shortages and surpluses. How maximizing behavior can eliminate these. Elasticity and total revenue.

Spencer, Chapters 4 and 21 and pp. 343-347.
Samuelson, Reading 8.

VI. *Some Applications of Supply and Demand*
Price ceilings. Price floors. Fair trade laws. Minimum wage legislation. Black markets. Theory of the allocation of time. The problem of agriculture. Market failure and externalities—the "socially optimal output." Public goods.

Spencer, Chapter 20 and pp. 99-104.
Samuelson, Readings 9, 10 and 50.

VII. *Basic Supply and Demand Analysis III*
Costs of production. Opportunity cost vs. outlay cost. Short run vs. long run. Production function. Short-run costs. Long-run costs. Productivity and cost.

Spencer, Chapter 23.

VIII. *Basic Supply and Demand Analysis IV*
The production function. The firm's constraint. Perfect competition and its assumptions. Equilibrium of the perfectly competitive firm in the short run. Industry equilibrium. The particular characteristics of competitive equilibrium.

Spencer, Chapter 24.
Samuelson, Readings 38, 39 and 40.

IX. *Imperfect Competition*
Monopoly. Price and output under monopoly—"too few resources and too high a cost." Comparison of resource allocation in monopoly vs. perfect competition. Oligopoly. Price leadership. Monopolistic competition—product differentiation. The cost of differentiation—deviation from socially "ideal" output. Constraints upon the imperfectly competitive firm. Antitrust legislation. The problem of Big Business. Patents. Collusion.

Spencer, Chapters 25, 26 and 30.
Samuelson, Readings 42, 43, 44 and 45.

X. *The Pricing of Factors of Production–An Introduction to Income Distribution*
Marginal productivity theory and the demand for productive input: the value of marginal productivity. Changes in the demand for inputs. Human capital. The theory of wages.

Spencer, Chapter 27 and pp. 455-458.

XI. *The Distribution of Income*

The purpose of this part of the course is to explore the existing income distribution in the U.S. and the way economics deals with the topic of income distribution in general.

a. The relevant criteria for defining poverty. The problem of definitions. ''Objective'' criteria.

Batchelder, Chapter 1.

b. The incidence of poverty in the U.S. and economic analysis of income disparity. The Lorenz curve. The Gini coefficient. Functional income distribution. The distribution of income in the U.S. The distribution of wealth in the U.S. Bureau of Census Income Statistics.

Spencer, Chapter 5.
Batchelder, Chapter 2.

c. The nature of the problem of the ''unemployable.'' Review of marginal productivity. Average productivity of the poor. Complications introduced by the minimum wage. How to raise the value of marginal productivity to or above the minimum wage. Is this feasible? Is education a solution?

Spencer, pp. 532-535.
Batchelder, Chapter 3.

d. Other explanations. Discrimination. Is inequality an inevitable consequence of a market system?

Batchelder, Chapters 5 and 6.

e. The ability of government to bring about a ''more egalitarian'' Lorenz curve. Private transfers and their role. Government transfers: for old age, for youth, for injury, etc. Provision of food and shelter.

Batchelder, Chapters 7 and 8.

f. Policy issues. Is less inequality socially desirable? Are governmental programs adequately handled? Progressive vs. regressive taxation as a remedy. Increasing the human capital of the poor.

Batchelder, Chapter 9.

APPENDIX VI

E104—Introduction to Macroeconomics: Unemployment, Inflation, and Growth

Section 1932, MWF 11:30 a.m. BH 013

Dr. Phillip Saunders
BH 913—337-4050
Office Hours MWF 9-11 a.m.
Or by appointment

Fall 1974 Undergraduate Interns, BH 908

Marc Newton	Th	11:00 a.m.
Harold Rhodes	Th	1:00 p.m.
Pam Whalley	Tu	1:30 p.m.

Major Course Objectives

1. To stimulate in students an awareness of, and a continuing interest in, important problems of economic policy. The kind of policy problems one encounters in the newspapers and news magazines.

2. To give students a firm grasp of the *few* basic principles and analytical tools they need in order to think intelligently about economic problems. Where necessary, technical theoretical detail will be sacrificed in order to obtain proficiency in the use of the basic tool kit; but the student is expected to master thoroughly the basic analytical concepts involved in measuring, explaining, and controlling inflation, unemployment, and economic growth. The basic assumption is that analytical concepts, tools and models are most effectively learned when the student can use them in understanding actual situations and problems that he or she is likely to encounter in the real world.

3. To help students to develop good method in thinking about economic problems. This involves specific attention to the process of orderly problem-solving, including:

   a. Carefully defining the problem, which in turn usually involves (1) understanding thoroughly the situation in which the problem exists, and (2) clarifying the objectives desired where public or private decision is involved. This implies stressing the importance of recognizing the existence of alternative values and value systems, and the problems of conflicting goals.

   b. Mapping out the main alternative ways of achieving the stated objectives.

   c. Analyzing carefully these alternative policies, and making use of whatever analytical concepts and principles are appropriate to the problem.

   d. Checking the solution reached, both for flaws in reasoning, and where feasible, against experience in comparable situations.

4. To help students to learn to evaluate and use both qualitative and quantitative evidence when conflicting viewpoints and approaches are encountered.

Operating This Section of the Course

This section will emphasize applying the tools in the basic analytical core to a variety of current economic policy problems that should be in the headlines more or less constantly during the course of the semester, i.e., unemployment, economic growth, inflation, and the international position of the dollar.

There will be several written homework assignments, four one-hour exams and/or announced quizzes, and a final exam that will consist of a series of multiple-choice questions common to all students in all sections of E104 and one or two essay questions designed especially for this section. More details on the nature of the one-hour exams and the exact determination of your course grade will be provided later, but note now the time of the common final exam—*it is very important that your schedule permits you to be free to take the final at 11:30 a.m. on Tuesday, December 17.*

All students are expected to do all the assigned reading and homework assignments promptly and thoroughly. No homework will be accepted later than the beginning of the class on the day when it is due, and all students are expected to take all exams on the dates they are scheduled. There are no provisions for make-up exams, but if a student has a *legitimate* excuse for missing a scheduled exam, the weight of his final will be increased enough to make up the points missed.

Course grades will be determined as follows: Each one-hour exam is worth 100 points. Each quiz is worth 50-60 points. The final exam is worth 200 points.

Unless otherwise stated, each homework assignment collected will be graded on a 15-point basis. Each student will be permitted to drop his lowest homework grade, and the points on the remaining homework assignments will be added to his exam scores to get a total number of points for the whole course, and the official course grade will be based on this overall point total. There is no curve for grading. The standards are absolute and everyone can get an "A+" or everyone can get an "F," depending upon where their overall point total falls in the following percentage distribution:

95 percent and higher	A+
90-94 percent	A
88-89 percent	A−
80-84 percent	B
75-79 percent	B−
70-74 percent	C+
65-69 percent	C
60-64 percent	C−
55-59 percent	D
50-54 percent	D−
49 percent or lower	F

Textbooks and Required Readings

G. L. Bach, *Economics: An Introduction to Analysis and Policy* (8th edition). Prentice Hall, 1974.

Readings in Economics '74-'75 (annual edition). Dushkin, 1974

A few other readings have been placed on reserve in both the Main Library and the Business Library.

OPTIONAL: Students who want to keep up on daily economic events can get special subscription rates to *The Wall Street Journal*—3 months $4.95, 4 months $6.60, 8 months $13.20, 1 year $17.50. This is entirely optional. Any students wanting to subscribe should sign the list at the front of the room after class today, Wednesday 8-28 or Friday 8-30. Put your address on the list, and you will be billed directly by the *Journal*. The list will be mailed in Friday, so you must sign up by then. Again, this is entirely optional.

TENTATIVE COURSE OUTLINE

Date	**Topic and Assignment**
M 8-26	*Organization and Orientation* READ assignment sheet THOROUGHLY.
W 8-28	*Introduction to Economic Analysis and Economic Policy* READ: Bach, Ch. 1 (including appendix) and Ch. 2, pp. 3-23.
	MEASURING TOTAL ECONOMIC PERFORMANCE (Or in the memorable words of Sgt. Joe Friday—who's he?—"Just the facts, ma'am, just the facts." Or, in the even more memorable words of Archie Bunker, "Where are we at?")
F 8-30	*Measuring Output and Income: GNP and Its Cousins–Round 1* READ: Bach, Chapter 8, pp. 98-104 and the "Plumbers Nightmare," Figure 8-2, p. 105. Be prepared to hand in answer to homework problem 1.
M 9-2	*Measuring Output and Income: GNP and Its Cousins–Round 2* Be prepared to hand in homework problem 2. (Pay close attention to the answer to homework problem 1 and to the footnotes in Bach's Tables 8-2, 8-3, and 8-4.) READ: *Readings*, Tables, c-1, p. 284; c-15, p. 286; c-17, p. 290.
W 9-4	*Measuring Price Changes: Price Indexes* READ: Bach, Ch. 8, pp. 104-108; *Readings*, Tables c-44, p. 292; and c-49, p. 293; and "Overhauling the CPI," attached to homework problem 3. Be prepared to discuss homework problem 3.
F 9-6	*Deflating "nominal" GNP figures to get "real" GNP figures in terms of constant (base year) purchasing power and using Real GNP per Capita as a measure of economic growth.* READ: Bach, Ch. 7, pp. 81-83, and the table attached to homework problem 4. Be prepared to hand in homework problem 4.
M 9-9	*GNP, Economic Growth, and Social Welfare* READ: Bach, Ch. 8, pp. 108-111 and case 4, pp. 113-114. *Readings*, 19, pp. 97-103, and Samuelson, "A New Way to Measure National Strength," attached to the assignment sheet.
W 9-11	*Money and Banking, I* READ: Bach, Ch. 16, Part A, pp. 201-210, and Appendix, pp. 219-221. Be prepared to hand in homework problem 5.
F 9-13	*Money and Banking, II* READ: Bach, Ch. 16, Part B, pp. 210-217.
M 9-16	*The Stock of Money and the Flow of Output and Income–Enter the Velocity of Circulation*

	READ: Bach, Ch. 12, pp. 149-155. *Readings* 7, pp. 32-36, is *optional* at this point.
W 9-18	*The Problem of Unemployment* READ: Bach, Ch. 7, pp. 83-89. *Readings* 18, pp. 91-96, Tables c-26, p. 294, and 6, p. 295.
F 9-20	*The Problem of Inflation* READ: Bach, Ch. 7, pp. 89-96, and Nordhaus and Shoven, "Inflation 1973: The Year of Infamy," on reserve in the library.
M 9-23	*Review for first one-hour exam*
W 9-25	*One-Hour Exam on Measuring Total Economic Performance*

EXPLAINING TOTAL ECONOMIC PERFORMANCE
(Or "How Did We Get Here Instead of Somewhere Else?")

F 9-27	*Building an Aggregate Economic Model to Determine Equilibrium Output, Income, and Employment (Whew!) I–Total Consumption Spending* READ: Bach, Ch. 11, pp. 138-143. Be prepared to hand in answer to homework problem 6.
M 9-30	*Building, etc. II–Investment Spending* READ: Bach, Ch. 11, 143-146. We will also return and go over the results of the first exam today.
W 10-2	*Building, etc. III–A Simple Model with Only C and I* READ: Bach, Ch. 10, pp. 122-128. Be prepared to hand in answer to homework problem 7.
F 10-4	*Building, etc. IV–Introducing Government Spending, Taxes, and "Putting It All Together"* READ: Bach, Ch. 10, pp. 129-132, and Appendix, pp. 135-137
M 10-7	*Building, etc. V–Keep "Putting It All Together"* Be prepared to hand in answers to homework problem 8.
W 10-9	*Playing with the Model and Review for Quiz on Model-Building*
F 10-11	*Quiz on Model-Building*
M 10-14	*Putting Money into the Model* READ: Bach, Ch. 13, pp. 163, *Readings*, 7, pp. 32-37.
W 10-16 & F 10-18	*Economic Fluctuations I and II* READ: Bach, Ch. 14 and Appendices, pp. 166-182. We will go over the quiz results on Wed. 10-16.

CONTROLLING TOTAL ECONOMIC PERFORMANCE
(Or "If We Don't Like It Here, How Do We Get Somewhere Else?")

M 10-21	*Fiscal Policy I* READ: Bach, Ch. 10, pp. 129-132, and Case 5, p 134. Be prepared to hand in the answer to homework problem 9.
W 10-23	*Fiscal Policy II* READ: Bach, Ch. 15, pp. 183-194, *Readings*, 11, pp. 61-63; 14 pp. 71-73; and 15, p. 74; and "The Tax Cut of 1964 and the Tax Increase of 1968," on reserve in the library.
F 10-25	*Special Aside–The Problem of the National Debt* READ: Bach, Ch. 15, pp. 194-198, and Case 8, p. 200.
M 10-28	*Monetary Policy* READ: Bach, Ch. 17, pp. 222-230, and Case 9, pp. 233-234.
W 10-30	*Monetary and Fiscal Policy Compared* No new reading, just class lecture.
F 11-1	*Practical Problems of Stabilization Policy I* READ: Bach, Ch. 18, pp. 235-246, and Case 10, pp. 248-249.
M 11-4	*Practical Problems of Stabilization Policy II* READ: *Readings*, 9, pp. 44-52, and Tables on p. 297.
W 11-6	*Review for Exam on Explaining and Controlling Economic Performance.*
F 11-8	*One-Hour Exam on Explaining and Controlling Economic Performance*
M 11-11	*Economic Growth I–What is It?* READ: Bach, Ch. 42, pp. 577-598, and Ch. 43.
W 11-13	*Economic Growth II–Growth Policy* READ: Bach, Ch. 44, pp. 606-612, and *Readings*, 42, pp. 202-206. We will also go over the one-hour exam results today.
F 11-15	*Economic Growth III–Is the End of the World at Hand?* READ: Bach, Ch. 44, pp. 600-606, and Appendix 613-615; *Readings*, 44, pp. 211-223.
M 11-18	*Pollution and the Environment* READ: Bach, Ch. 36 and Case 24, pp. 489-501, and *Readings*, 43, pp. 207-210.
W 11-20	*Economic Development in the Third World* READ: Bach, Ch. 45, pp. 616-640, and *Readings*, 54, pp. 264-270.

F 11-22	*Review for Quiz on Economic Growth and Development*
M 11-25	*Quiz on Economic Growth and Development*

HAPPY THANKSGIVING

M 12-2	*The Case for International Trade* READ: Bach, Ch. 38, pp. 521-528. We will go over the last quiz results today.
W 12-4	*Tariffs, Quotas, and Free Trade* READ: Bach, Ch. 39 and Case 25, pp. 535-546, and *Readings*, 47 and 48, pp. 234-244.
F 12-6 & M 12-9	*The U.S. Balance of Payments and Foreign Exchange Rates* READ: Bach, Ch. 38, pp. 530-534, Ch. 41 and Case 26, pp. 555-572; and *Readings*, 50 and 52, pp. 249-251 and pp. 257-259.
W 12-11	*Review for final exam and course and instructor evaluation* Attendance at this meeting is *mandatory*. Information about questions that might appear on the final will be discussed and distributed at this class meeting only, and at no other time. BRING A *PENCIL* TO CLASS WITH YOU ON 12-11.
F 12-13	Optional Review Session—Last Chance to Pull Things Together

FINAL: TUESDAY, DECEMBER 17, 11:30 a.m.

Plan to attend, unless you can stand the alternative cost, i.e., anyone missing for any reason other than fatal illness will get a zero.

BRING A PENCIL TO THE FINAL WITH YOU ON 12-17.

APPENDIX VII

E104—Introduction to Macroeconomics: Current Economic Problems

Section 1853, MWF, BH005, 9:30 a.m.
Section 1860, MWF, McNutt Flame Room, 11:30 a.m.

Marjory Thrasher
Office: Memorial 315, phone 337-8580
Offices Hours: 10:30-11:10 M Memorial
8:30-9:15 W Memorial
10:40-11:25 W McNutt Flame Room
12-15-12:45 MW McNutt
Or by appointment

Mailboxes: Ballantine 9th Floor
Box 300 McNutt

Major Course Objectives

1. To stimulate awareness of, and interest in, economic problems.
2. To provide students with a set of basic principles and tools which are helpful in analyzing economic problems.
3. To help students to develop good thinking habits about economic problems.
4. To help students to learn to evaluate evidence when conflicting views are encountered.

How the Objectives Will Be Met

1. Emphasis will be placed on applying the basic set of principles and tools to a variety of current economic problems.
2. There will be reading assignments due nearly every period.
3. There will be some written homework assignments.

Course Grades and Policies

The grades will be determined by four one-hour exams, some written assignments, and a final which will consist of a series of multiple-choice questions common to all students in all sections of E104 plus some questions designed specifically for these two sections. Note now the time of the common final—it is very important that your schedule permits you to be free to take the final from *7:30-9:15 a.m., Monday, May 6, 1974.*

All students are expected to do all the assigned readings and homework promptly and thoroughly. No homework, which is collected, will be accepted later than the beginning of class on the day when it is due. (If you have reason to believe you will not be able to attend class on the due date, you have the option of handing the work in early or getting it to one of my mailboxes before class.)

All students are expected to take all exams on the dates scheduled. There are no provisions for make-up exams, but if a student has a *legitimate* excuse for missing a scheduled exam, the weight of the final will be increased enough to make up the points missed.

Each one-hour exam is worth 100 points.
The final exam is worth 200 points.
Each homework is worth 15 points if it is collected.

Required Text and Readings

Lloyd G. Reynolds, *Macroeconomics Analysis and Policy*. Richard D. Irwin, 1973
Roger L. Miller and Raburn M. Williams, *The Economics of National Issues*. Canfield Press, 1972

Recommended but Optional

Students who want to keep up on daily economic events can get special subscription rates to *The Wall Street Journal*—3 months $4.95, 4 months $6.60, 8 months $13.20, 1 year $17.50. Any student wanting to subscribe should sign the list at the front of the room after class any time during the week of Jan. 14-18. Put your address on the list, and you will be billed directly by the *Journal*. The list will be mailed Friday; so you must sign up by then if you want to take advantage of the special rates

Tentative Course Outline

Date	*Topic and Assignment*
1-14	Organization and Orientation (For those who have not taken E103, Reynolds, Chs. 1 and 2 are recommended but optional.)
1-16	Measuring Output and Income, Reynolds, Ch. 3, pp. 38-46
1-18	Measuring Output and Income, Reynolds, Ch. 3, pp. 46-53
1-21	Building an Aggregate Economic Model to Determine Equilibrium Output, Income and Employment—I (Consumption), Reynolds, Ch. 4, pp. 57-70
1-23	Building—II (Investment), Reynolds, Ch. 4, pp. 70-78
1-25	Building—III, Reynolds, Ch. 4, pp. 78-83
1-28	Pulling the Model Together
1-30	One-Hour Exam
2-1	Building—IV (Government), Reynolds, Ch. 5, pp. 84-91
2-4	Building—V, Reynolds, Ch. 5, pp. 91-96
2-6	Building—VI, Reynolds, Ch. 5, pp. 96-99
2-8	Building—VII (Foreign Trade), Reynolds, Ch. 5, pp. 99-106
2-11	Inflation, Reynolds, Ch. 6, pp. 109-115
2-13	Inflation, Reynolds, Ch. 6, pp. 115-128
2-15	Inflation, Reynolds, Ch. 6, pp. 128-131; Miller and Williams, Ch. 1

2-18	Discussion of What's Happening Now and Review
2-20	One-Hour Exam
2-22	Deflating GNP
2-25	Unemployment, Movie: "When Output Was Low," No. 23 from the American Economy Series
2-27	Fiscal Policy, Reynolds, Ch. 7, pp. 132-141
3-1	Fiscal Policy, Reynolds, Ch. 7, pp. 141-145; Miller and Williams, Chs. 17 and 18
3-4	Fiscal Policy, Reynolds, Ch. 7, pp. 146-150; Miller and Williams, Ch. 21
3-6	Banking, Reynolds, Ch. 8; Miller and Williams, Ch. 5
3-8	The Federal Reserve System, Reynolds, Ch. 9
	Have a Happy Spring Vacation!
3-18	Review
3-20	One-Hour Exam
3-22	Discussion of What's Happening Now
3-25	Monetary Policy, Reynolds, Ch. 10, pp. 182-188; Miller and Williams, Ch. 16
3-27	Monetary Policy, Reynolds, Ch. 10, pp. 188-195; Miller and Williams, Chs. 12 and 13
3-29	Monetary Policy, Reynolds, Ch. 10, pp. 195-202; Miller and Williams, Ch. 20
4-1	Monetary Policy, Reynolds, Appendix, Ch. 10, pp. 202-207; Miller and Williams, Ch. 6
4-3	Fluctuations in National Income, Reynolds, Ch. 11, pp. 211-222
4-5	Forecasting, Reynolds, Ch. 11, pp. 222-229
4-8	Discussion of What's Happening Now and Review
4-10	One-Hour Exam
4-12	High Employment and Price Stability, Reynolds, Ch. 12

4-15	High Employment and Price Stability. Movie: Friedman and Samuelson on "Can We Have Full Employment Without Inflation?" No. 48 TAE series; Miller and Williams, Chs. 8, 9, 10 and epilogue
4-17	External Balance, Reynolds, Ch. 13, pp. 251-258; Miller and Williams, Ch. 25
4-19	External Balance, Reynolds, Ch. 13, pp. 258-273; Miller and Williams, Ch. 24
4-22	International Trade, Reynolds, Ch. 14; Miller and Williams, Ch. 22
4-24	Growth, Reynolds, Ch. 15, pp. 293-304
4-26	Growth, Reynolds, Ch. 15, pp 304-312
4-29	Course and Instructor Evaluation. Attendance at this meeting is *mandatory*. Bring a No. 2 pencil.
5-1	Finishing Up
5-3	Optional Review
5-6	Final Exam, 7:30-9:15 a.m. Bring a No. 2 pencil. (Anyone with an unexcused absence will receive a zero.)

APPENDIX VIII
E104—Introduction to Macroeconomics: Inflation and Unemployment

Mr. Campbell Spring 1975

Outline and Assignments

TEXTS: The course is organized around G. L. Bach, *Economics: an Introduction to Analysis and Policy*. I also expect you to buy K. G. Elzinga, *Economics: a Reader*, Harper & Row, 1972. There will also be assignments in readings on reserve in the library, especially the *Economic Report of the President*, when that comes out a little later in the semester.

THE OBJECTIVES OF THE COURSE ARE:

1. to stimulate an awreness of, and a continuing interest in, problems of economic policy
2. to help students to master a limited number of basic concepts, principles and theories indispensable for thinking intelligently about economic problems. This implies some
3. practice in application of these concepts and this kind of reasoning to a number of practical problems of economic policy;
4. to make one aware that what one should get out of economics is not a few pat answers but an appreciation of the way in which facts, theories and values are jointly involved in analyzing and finding answers to problems of economic policy.

WORK OF THIS SECTION OF THE COURSE: There will be a considerable number (eight to ten) of small quizzes, problems and exercises which will account for approximately 45 percent of the final grade. Another 45 percent will come from the final exam. This will be a departmenal final (half multiple-choice questions common to all sections of E104, half an essay part made up and graded by me). The other ten percent is to allow for miscellaneous considerations such as attendance, class discussion, etc.

There will be no makeups, but everyone will be allowed to drop the quiz with the lowest grade.

The Departmental Final Exam is scheduled for 11:30 AM-1:15 PM, Wednesday, May 7, 1975.

OUTLINE AND ASSIGNMENT SHEET

Week 1 (Jan. 13-17) Review of basic concepts—circular flow, sectoring, etc. Review chapters 1, 2 and 3 in Bach. Read Chapter 7 in Bach on "The Macroeconomy"

Week 2 (Jan. 20-24) National income and its cousins. The concepts, the data, the purpose. Real vs. money output. Inflation and measurement of price changes. Bach, Chapter 8. Selection 30 in Readings book (Morgenstern on statistics).

Week 3 (Jan. 27-31) Aggregate supply and aggregate demand. The simple theory of income determination. The problem of macroeconomic imbalance—unemployment, inflation, consumption, saving and investment. Bach, Chapters 9, 10.

Week 4 (Feb. 3-7) Three types of spenders—consumers, business, government. Determinants of their spending behavior. Bach, Chapters 11 and 34. Selection 35 in

Readings book (Pechman on taxes).

Week 5 (Feb. 10-11) Money and the aggregate economic model. "Money sitting and money on the wing." Synthesis of money approach and spending approch. Bach, Chapters 12, 13.

Week 6 (Feb. 17-21) Business cycles and forecasting. Bach, Chapter 14

Week 7 (Feb. 24-28) Fiscal policy to combat recession and inflation. Budget deficits and the national debt. Bach, Chapter 15. Selection 38 in Readings book (Lerner on national debt). Selections 36, 37 in Readings book (on negative income tax).

Week 8 (March 3-7) Money and the banking system. What money is, and how the amount is increased and decreased.

MIDTERM GRADES DUE

Week 9 (March 10-14) Monetary policy and its effectiveness. Bach, Chapter 17. Selections 44, 45 and 47 in Readings book (on Friedman's views about monetary policy).

Week 10 (March 17-21) The trade-off between full employment and inflation. How can we have both inflation and recession at the same time? Bach, Chapter 18. Selections 38, 40-43 in Readings book.

SPRING VACATION

Week 11 (March 31-Apr. 4) Catch up and flexibility.

Week 12 (Apr. 7-11) Macroeconomics and international trade. Balance of payments problems. The world monetary system. Bach, Chapters 38, 40-41. Selection 50 in Readings book (on fixed vs. flexible exchange rates).

Weeks 13 and 14 (Apr. 14-25) Discussion and evaluation of current U.S. economic policy. Readings to be assigned.

Week 15 (Apr. 28—May 2) Review.

May 7—11:30 AM-1:15 PM FINAL EXAMINATION

APPENDIX IX

E103 and E104 Course and Instructor Evaluation Questionnaire

This evaluation is to be completely anonymous. Do *not* put your name anywhere. Your instructor will not be given this evaluation and comment sheet until after it has been studied by our course evaluators, and not until after all grades have been turned in for this course.

So that your responses can be compared with other information such as your final course grade, however, you should indicate your student number in the space provided on the separate answer sheet. Your instructor will *never* see the separate answer sheet, it will eventually be destroyed, and your complete anonymity is assured.

Please take your time and answer each question carefully. In addition to marking your response *in pencil* on the separate answer sheet, add as many comments as you wish on this evaluation form. Our evaluators will consider carefully any criticisms or compliments you care to make. If you do not have enough time to write all the comments you want, you are urged to write a letter directly to the "Chairman, Department of Economics." These evaluations will be used in course and teaching assignments, correction of course and teaching "problems," and nominations for teaching awards.

In marking responses on the separate answer sheet, follow the directions below and *use a pencil*. Do not use a pen.

Student Information

- Put your student number in the appropriate part of the answer sheet.
- Note the section I.D. number written on the blackboard, and put this number in spaces 1-4 in front of where you put your student number on the answer sheet.

Answer the remaining questions below and in *Part I* of the separate answer sheet. Note the number before each question below, read the question carefully, circle your response on this form, and blacken in the appropriate space on the separate answer sheet.

1. This section of E103 or E104—Introductory Economics carries the subtitle that is written on the blackboard. Were you aware of this subtitle when you enrolled in this section of the course?

   A. Yes B. No

2. Are you taking this course on a required or an elective basis?

   A. Required B. Elective

3. Please indicate what grade you now reasonably expect to receive in this course:

   A. A
   B. B
   C. C
   D. D
   E. F.

4. What was your attitude toward the subject matter of this course *at the beginning of the semester?*

A. Very interested
B. Slightly interested
C. Neither interested nor uninterested
D. Slightly uninterested
E. Very uninterested

5. Your attitude toward the subject matter of the course, now, *at the end of the semester* is

A. Very Interested
B. Slightly interested
C. Neither interested nor uninterested
D. Slightly uninterested
E. Very uninterested

6. Knowing what you now know, and if you had it to do all over again, would you elect to take this course if it was not a required course?

A. Definitely
B. Probably
C. Not sure
D. Probably not
E. Definitely not

Instructor Evaluation

The next 22 statements (Nos. 7-28) are about your instructor. In most cases you are asked to indicate whether you (A) Strongly agree, (B) Agree, (C) Neither agree or disagree, (D) Disagree, (E) Strongly disagree. Note the number before each statement below, read the statement carefully, circle your response on this sheet, and blacken in the appropriate space on the separate answer sheet. Feel free to add any comments you wish on this sheet. Please make a special effort to comment in the space following question 28.

7. The instructor seemed very enthusiastic about teaching this course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

8. The instructor's attitude toward students was sympathetic and helpful. He (or she) seemed genuinely concerned that the student understand the subject matter in the course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

9. The instructor made the objectives and purposes of the course and individual assignments very clear. I always knew what was expected of me.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

10. The homework, exams and quizzes seemed clearly aimed at major learning objectives, and did not get bogged down in trivial points or minor details.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

11. The homework, exams and quizzes were graded and returned promptly.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

12. The homework, exams and quizzes were graded fairly and impartially.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

13. The feedback on homework, exams and quizzes was very good, and enabled me to understand clearly how well I was doing in the course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

14. The instructor took his (or her) teaching seriously and was always well prepared for regular class meetings.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

15. The instructor seemed to pitch the course to the better students, and tended to go too fast for the majority.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree

D. Disagree
E. Strongly disagree ·

16. The instructor seemed to pitch the course to the poorer students, and tended to go too slowly for the majority.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

17. The instructor's voice and speaking ability made it easy to understand what was being said in class.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

18. The instructor was free from distracting or annoying personal mannerisms that make learning more difficult.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

19. The instructor provided ample opportunity to discuss and raise questions about materials presented in class.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

20. In explaining difficult points, the instructor was able to go beyond the textbook and supply useful examples and applications.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

21. The instructor seemed to encourage and value reasonable disagreements about points raised in class.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

22. The instructor made effective use of the blackboard in emphasizing and explaining key points.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

23. The instructor's presentations could have been improved with the use of an overhead projector, simulation games, movies, and/or other teaching aids.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

24. The instructor made himself available for out-of-class consultation and discussion.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

25. The instructor so aroused my interest that I was inspired to investigate the subject beyond the formal course requirements.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

26. In terms of overall teaching effectiveness, and compared to other *introductory* course instructors you have had at I.U., how would you rate your instructor in this course?

Comments

A. One of the very best
B. Above average

C. Average
D. Below average
E. One of the very worst

27. If you had another chance to take this instructor in another course, would you
    A. Try hard to get into his/her section
    B. Be pleased to have him/her again, but would not seek him/her out
    C. Not care one way or the other
    D. Rather not have him/her again
    E. Try hard to change sections (if assigned to him/her)

28. What *one* thing could your instructor do to improve his/her effectiveness most as a teacher?

PLEASE
COMMENT

Course Evaluation

The next 12 statements (Nos. 29-40) are about the course. In most cases, you are asked to indicate whether you (A) Strongly agree, (B) Agree, (C) Neither agree or disagree, (D) Disagree, (E) Strongly disagree. Note the number before each statement below, read the statement carefully, circle your response on this sheet, and blacken in the appropriate space on the separate answer sheet.

If you have no basis for an opinion, *DO NOT CIRCLE* any response and leave the appropriate space on the separate answer sheet blank.

Feel free to add any comments you wish on this sheet. Please make a special effort to comment in the space following question 40.

29. The subject matter of this course is important and relevant in today's world.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

30. The subject matter of this course is intellectually challenging.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

31. The topics covered in this course seemed well organized and integrated.

Comments

A. Strongly agree

B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

32. The size of this class was appropriate for this type of course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

33. The classroom facilities for this class were appropriate for this type of course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

34. The textbook provided a substantial contribution to what I learned from this course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

35. The required readings (other than the principal textbook) provided a substantial contribution to what I learned in this course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

36. I feel that I learned a lot from this course.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

37. As a result of my experience in this course, I would *like* to take additional courses in economics.

Comments

A. Strongly agree
B. Agree
C. Neither agree or disagree
D. Disagree
E. Strongly disagree

38. Compared to textbooks you have used in other *introductory* courses at I.U., how would you rate the textbook in this course?

Comments

A. One of the very best
B. Above average
C. Average
D. Below average
E. One of the very worst

39. Compared to required readings (other than the principal textbook) you have used in other *introductory* courses at I.U., how would you rate the required readings in this course?

Comments

A. Some of the very best
B. Above average
C. Average
D. Below average
E. Some of the very worst

40. What *one* thing could be done to improve the effectiveness of this course most?

PLEASE
COMMENT

APPENDIX X
Sample E103 Final Exam Questions and Student Performance Data

1. Economic goods are termed scare goods because they
   - A. cannot be increased in quantity to any significant extent.
   - B. are of primary importance in satisfying the needs of a society.
   - C. are not available in sufficient quantities to satisfy all wants for them.
   - D. are not produced in sufficient quantities to satisfy the effective demand for them.

Term		*Fall '71*	*Spring '74*
R with total test score		.31	.29
Percent distribution of responses:	A.	8	4
	B.	10	4
	C.	66	76
	D.	16	16

2. The real cost to society of building a new hospital in X-city, Indiana, is
   - A. the taxes necessary to pay for the new hospital.
   - B. the other desirable goods that could have been produced instead of the new hospital.
   - C. the money spent for the new hospital, minus the building subsidy from the federal government.
   - D. the cost of constructing the hospital now as opposed to the cost of a new hospital at a later date.

Term		*Fall '71*	*Spring '74*
R with total test score		.35	.32
Percent distribution of responses:	A.	6	5
	B.	86	89
	C.	4	3
	D.	4	3

3. The Soviet constitution proclaims that no charge shall be made for use of water resources.
   - A. This is efficient since water is a free good provided at no cost by nature.
   - B. This is an interesting difference from a capitalist economy, but has no economic significance.
   - C. This is inefficient because using water for one purpose prevents its use for another purpose.
   - D. This will increase the satisfaction the Russian people can get from their limited resources since it will make goods like electricity and cotton, that are produced with water, cheaper.

Term	*Spring '75*
R with total test score	.42

Percent distribution of responses:	A.	9
	B.	7
	C.	51
	D.	33

4. "Milk production at a Florida dairy farm jumped almost 15% after it hired 15 women to handle the day shift in its modern milking parlor. Explains the farm's production manager: The milkmaids 'inherently have greater sensitivity' than men and better understand the cows." (Source: *The Wall Street Journal*, November 17, 1970).'

With respect to factors of milk production, the farm's production manager would place the

A. demand curve for women employees to the right of the demand curve for men employees.
B. demand curve for women employees to the left of the demand curve for men employees.
C. supply curve for women employees to the left of the supply curve for men employees.
D. supply curve for women employees to the right of the supply curve for men employees.

Term		*Fall '71*	*Fall '74*
R with total test score		.32	.33
Percent distribution of responses:	A.	83	79
	B.	4	5
	C.	4	2
	D.	9	14

5. TACOMA, Wash.—Weyerhaeuser Company said it is increasing the price of its paper milk cartons 'approximately 2½%, effective with shipments on Jan. 4.' The concern cited "rising costs of labor, material and freight as the primary contributing factors to the price rise." (Source: *The Wall Street Journal*, November 12, 1970). Assuming that the conventional supply and demand model is applicable in this case, the most likely "cause" of the higher price of paper milk cartons is

A. a decrease in supply (i.e., a leftward shift in the supply curve); demand relatively unchanged.
B. an increase in supply (i.e., a rightward shift in the supply curve); demand relatively unchanged.
C. a decrease in demand (i.e., a leftward shift in the demand curve); supply relatively unchanged.
D. an increase in demand (i.e., a rightward shift in the demand curve); supply relatively unchanged.

Term		*Spring '73*	*Fall '74*
R with total test score		.47	.28
Percent distribution of responses:	A.	52	54
	B.	14	5
	C.	8	8
	D.	26	33

6. The number of persons seeking to obtain tickets to the Rose Bowl in Fall Term [Kentucky Derby in Spring] is nearly always greater than the number of available tickets (and seats) for the Bowl [Derby]. This is evidence that the price of tickets is

A. above the competitive equilibrium.
B. below the competitive equilibrium.
C. at the competitive equilibrium, because the number of tickets bought equals the number sold.
D. above the competitive equilibrium if the demand is inelastic, but below if the demand is elastic.

Term		*Fall '73*	*Spring '74*
R with total test score		.50	.45
Percent distribution of responses:	A.	11	12
	B.	71	68
	C.	6	7
	D.	12	13

7. This year not everyone who wanted to buy tickets for the IU basketball games could be accomodated, and the allocation of student tickets was settled by drawing. This is evidence that

A. the demand for basketball tickets is elastic.
B. the price was above the competitive equilibrium.
C. the athletic department could have increased its revenue by raising the price.
D. for IU students the marginal utility of watching basketball is higher than for watching football.

Term		*Fall '74*	*Spring '75*
R with total test score		.42	.47
Percent distribution of responses:	A.	15	15
	B.	5	5
	C.	64	70
	D.	16	10

8. Alcoa has recently announced the development of a new aluminum automobile radiator to replace the copper type now in general use. Adoption of the aluminum radiator will be speeded up by

A. sale of industrial copper out of U.S. government stockpiles.
B. increased demand for copper by the electronics industry.
C. discovery of new and cheaper sources of copper.
D. increased use of aluminum for beverage cans.

Term		*Fall '72*	*Spring '74*
R with total test score		.41	.41
Percent distribution of responses:	A.	10	10
	B.	80	82
	C.	5	4
	D.	5	4

9. During the 1960's many private colleges and universities had many more applicants for admission than openings for students. This indicates that, during the 1960's

A. the demand for admission to private colleges and universities was greater than the demand for public ones.

B. market principles were not applicable to private colleges and universities since they were not profit-making institutions.

C. society wanted enough additional resources allocated to private colleges and universities to permit them to admit all applicants.

D. private tuition was below the equilibrium price and a nonprice rationing procedure was necessary to allocate the available supply.

Term		*Fall '73*	*Spring '74*
R with total test score		.37	.46
Percent distribution of responses:	A.	12	12
	B.	8	7
	C.	8	7
	D.	72	74

10. A city has decided to build 5,000 houses and to lease them to low-income persons at a rental below cost. Other things being the same, such as population, what effect would you expect this public housing project to have on the market for private housing?

A. A decrease in tenants, followed later by an increase in rents.

B. A decrease in rents, followed later by a decrease in the quantity supplied.

C. An increase in rents, followed later by an increase in the quantity supplied.

D. No effect, since persons who are eligible for public housing cannot afford acceptable private housing.

Term		*Fall '72*	*Fall '73*
R with total test score		.42	.45
Percent distribution of responses:	A.	24	21
	B.	46	46
	C.	3	4
	D.	26	30

11. Which of the following would cause a rightward shift in the demand for gasoline for private cars?

A. A large decrease in the price of gasoline.

B. A large increase in the price of automobiles.

C. A large increase in the price of public transport.

D. The development of a cheap nuclear reactor, compact enough for use in a private automobile.

Term		*Fall '73*	*Spring '74*
R with total test score		.47	.47
Percent distribution of responses:	A.	22	21
	B.	4	2
	C.	69	72
	D.	5	5

12. Other things being constant, racial discrimination that pushes Blacks into low-wage occupations causes

A. decreased demand for labor in such low-wage occupations.
B. increased demand for labor in such low-wage occupations.
C. a fall in wage rates in high-wage occupations.
D. a fall in wage rates in low-wage occupations.

Term		*Fall '73*	*Spring '74*
R with total test score		.42	.40
Percent distribution of responses:	A.	26	23
	B.	9	11
	C.	2	2
	D.	63	64

13. New minimum wage legislation extended coverage to workers in hotels, motels and restaurants with annual gross sales of $500,000 or more. The minimum for such workers was set at $2.00 an hour. Smaller hotels, motels and restaurants continued to be exempt from the law.

Those hotels and motels in one community affected by the new law raised their prices 10 percent because of the higher costs. The operators of some of these establishments expressed the opinion that those not covered by the act would have to increase their prices too "because they will be competing for labor with those which are covered." Was the reasoning in the quotation true or false? Why?

A. True, because the higher wages in the hotels covered by the law tend to attract labor from those not covered, compelling the latter to raise wages.
B. True, because the workers in the smaller establishments, seeing that the larger ones are paying more, demand better pay also.
C. False, because the demand for labor is elastic; the number of workers employed by the hotels covered by the law being therefore unaffected, the supply of labor to those not covered would remain the same.
D. False, because the minimum wage reduces employment in hotels covered by the act, making it easier for those not covered to get labor at existing wages.

Term		*Spring '74*	*Spring '75*
R with total test score		.39	.35
Percent distribution of responses:	A.	36	36
	B.	4	3
	C.	18	18
	D.	42	43

QUESTIONS 14 and 15 ARE BASED ON THE FOLLOWING PARAGRAPH:

"Georgia Moon" (illegal "moonshine" whiskey) is selling for $2.00 per quart at local bootleggers. Total sales in Piney County, Georgia, is estimated to be 500 quarts per night. Considering normal demand and supply curves for "Georgia Moon" and legal intoxicants, and assuming that a significant portion of the county's population feels that *"Georgia Moon" is an excellent substitute for legal intoxicants* and vice versa, find the impact of the following events:

14. In spite of demonstrations by local church women and the WCTU, the Piney County Commission voted to allow liquor and beer stores carrying legal intoxicants to advertise in local newspapers and to erect large signs in front of their establishments. Prior to this time only a large red dot could be displayed in the windows of such stores. As a result

A. the demand for "Georgia Moon" increases and the price of legal intoxicants decreases.

B. the demand for legal intoxicants increases and the price of "Georgia Moon" decreases.

C. the demand for "Georgia Moon" decreases, and the price of "Georgia Moon" increases.

D. the demand for legal intoxicants decreases and the price of legal intoxicants increases.

Term		*Spring '73*	*Spring '75*
R with total test score		.54	.37
Percent distribution of responses:	A.	5	8
	B.	79	80
	C.	12	7
	D.	4	5

15. Foiled churchwomen march on the state legislature and demand that the state excise taxes on alcoholic beverages be raised. Fearing the now even more aroused women's voting power, the legislature acquiesces and raises the tax on legal beverages. Piney County liquor stores quickly raise their prices. As a result,

A. the demand for "Georgia Moon" increases, and the price of "Georgia Moon" increases.

B. the demand for "Georgia Moon" increases, and the price of "Georgia Moon" decreases.

C. the demand for "Georgia Moon" decreases, and the price of "Georgia Moon" increases.

D. the demand for "Georgia Moon" decreases, and the price of "Georgia Moon" decreases.

Term		*Spring '73*	*Spring '75*
R with total test score		.49	.38
Percent distribution of responses:	A.	83	81
	B.	14	14
	C.	2	3
	D.	1	2

16. A state representative recently introduced a bill in the state legislature to increase the tax on beer sold within the state from \$.30 to \$.60 per gallon. He stated that his proposed tax would "tend to bring about more equality in the distribution of after-tax income within the state." His statement on the effect of the tax increase would be correct *only* if it could be shown that

A. the quantity of beer purchased within the state is highly responsive to changes in its price.

B. people with small incomes tend to buy more beer each year than people with larger incomes.

C. people with large incomes tend to spend the same proportion of their incomes on beer each year as do people with smaller incomes

D. people with large incomes tend to spend a larger proportion of their incomes on beer each year than people with smaller incomes.

Term		*Fall '72*	*Spring '74*
R with total test score		.39	.43
Percent distribution of responses:	A.	10	9
	B.	4	3
	C.	14	14
	D.	72	74

17. The federal government has proposed that new and stricter standards be established for sulfur dioxide emissions. Since coal burning emits a great deal of sulfur dioxide, these new standards will especially affect coal-burning firms. The president of the United Mine Workers protested the proposed government standards on the grounds that it would "drive public utilities and other large coal-burning firms to nuclear reactors." This suggests that

A. government interference would upset the natural true economic advantages of cheap coal.

B. the sulfur dioxide standards, while well intended, are too strict to be practical.

C. coal is a cheap fuel partly because users can avoid an important part of the cost of burning it. If this cost is taken into account, coal may be more expensive than nuclear power.

D. miners would prefer a tax on the use of coal rather than the sulfur dioxide standards.

Term		*Spring '74*	*Spring '75*
R with total test score		.41	.43
Percent distribution of responses:	A.	11	9
	B.	6	7
	C.	75	74
	D.	8	10

18. Suppose that, as the result of a very large harvest, the price of apples at Krogers supermarket fell from $1.00 per pound to $.50 per pound and that the quantity of apples purchased increased from 400 pounds a day to 800 pounds a day. Over this price range, an economist would say that the demand for apples is

A. elastic.

B. inelastic.

C. unitary elastic.

D. impossible to determine from the information given.

Term		*Fall '73*	*Spring '74*
R with total test score		.38	.34
Percent distribution of responses:	A.	26	26
	B.	6	4

	C.	64	64
	D.	5	6

19. The city government of X-city, Indiana, is considering raising parking rates within the city limits for two reasons: (1) to raise more revenue, and (2) to reduce traffic in the congested and smog-ridden city center. The first goal will be best served and the second goal least served if the demand for parking places within the city is

A. unit elastic.
B. perfectly elastic.
C. relatively elastic.
D. relatively inelastic.

Term		*Spring '75*
R with total test score		.42
Percent distribution of responses:	A.	5
	B.	9
	C.	9
	D.	77

20. The country that produced 50 percent of the world's coffee limited its coffee exports in order to increase its income from sales abroad. Which of the following conditions would contribute the most to the success of this policy?

A. Inelastic demand by coffee importers; inelastic supply by other coffee producers.
B. Inelastic demand by coffee importers; elastic supply by other coffee producers.
C. Elastic demand by coffee importers; inelastic supply by other coffee producers.
D. Elastic demand by coffee importers; elastic supply by other coffee producers.

Term		*Fall '73*	*Fall '74*
R with total test score		.41	.45
Percent distribution of responses:	A.	51	49
	B.	29	29
	C.	15	17
	D.	5	5

APPENDIX XI

Sample E104 Final Exam Questions and Student Performance Data

1. The term "real GNP" as contrasted with "dollar GNP" (or "nominal GNP" or "money GNP") refers to
   A. dollar GNP minus exports.
   B. dollar GNP corrected for price changes.
   C. the part of GNP that is goods, as opposed to services.
   D. the part of GNP that is really useful, not frivolous or wasteful production.

Term		*Fall '74*	*Spring '75*
R with total test score		47	.40
Percent distribution of responses:	A.	4	2
	B.	86	90
	C.	7	6
	D.	3	2

2. As it is usually defined, the U.S. money supply consists mostly of *
   A. coins and currency.
   B. federal reserve notes.
   C. deposits in Federal Reserve Banks.
   D. demand deposits in commercial banks.

Term		*Fall '74*	*Spring '75*
R with total test score		.50	.37
Percent distribution of responses:	A.	10	10
	B.	10	7
	C.	8	9
	D.	72	74

3. The economy is said to be in macroeconomic "equilibrium" when
   A. there is full employment.
   B. the government budget is in balance.
   C. the economy is operating at capacity.
   D. there is no tendency for it either to expand or contract.

Term		*Fall '71*	*Spring '73*
R with total test score		.40	.35
Percent distribution of responses:	A.	4	5
	B.	4	4
	C.	10	13
	D.	82	78

4. The meaning of the statement "Every government has a fiscal policy, whether it realizes it or not," is *best* expressed by which of the following?
   A. In many cases, decisions to spend money must be made even though the expendi-

ture runs contrary to the policy indicated.

B. Every government is forced to do something about depression and inflation, whether it wants to or not.

C. Every government must decide on a tax and expenditure program, and these decisions are bound to have effects upon the economy and upon NNP.

D. Every government must make decisions about the quantity of money in the economy, and hence it must influence credit conditions and the rate of interest.

Term		*Fall '74*	*Spring '75*
R with total test score		.32	.34
Percent distribution of responses:	A.	4	5
	B.	6	4
	C.	80	81
	D.	10	10

5. The present situation in a hypothetical economy looks like this: There is unemployment of 8 percent, a lot of factories are working short weeks. GNP is 900 billion dollars. Because a lot of people are out of work, and profits are low, the government's tax collections have fallen, and it is spending more than it is taking in. In an argument, people offer the analyses listed below.

Which of the arguments offers the best economic analysis of this situation?

A. The reason for the unemployment is that the government is spending foolishly beyond its income, and that is bound to lead to a loss of jobs.

B. The trouble is that consumers aren't spending enough—if they would quit trying to save for a rainy day, and let go of their money, everything would be all right.

C. If you think about it, you can see that the unemployment is caused by the fact that investment is inadequate. Businessmen aren't spending as much as they ought to.

D. The best way to interpret the situation is to say that aggregate demand is too small to call forth the full amount of output the economy is capable of producing. But there is no way to tell whether the deficiency is in household spending, business spending, or government spending.

Term		*Fall '72*	*Spring '73*
R with total test score		.33	.28
Percent distribution of responses:	A.	2	1
	B.	6	4
	C.	7	6
	D.	85	89

6. In terms of the classicial monetary equation, $MV = PT$, the most serious problem that the managers of monetary policy have is that

A. V is variable.

B. P is inflexible.

C. M is uncontrollable.

D. T is mainly determined by economic growth.

Term	*Fall '72*	*Spring '72*
R with total test score	.39	.43

Percent distribution of responses:	A.	75	74
	B.	4	7
	C.	5	3
	D.	16	16

7. Two policies that the Federal Reserve might use if it thought aggregate demand should be increased are to
   - A. sell bonds in the open market, and raise reserve requirements.
   - B. buy bonds in the open market, and lower the rediscount rate.
   - C. raise the rediscount rate, and raise reserve requirements.
   - D. sell bonds in the open market, and raise the rediscount rate.

Term		*Fall '72*	*Fall '74*
R with total test score		.41	.38
Percent distribution of responses:	A.	10	4
	B.	81	87
	C.	3	2
	D.	6	6

8. Miss Adams had for many years
With no complaints and with no tears
Cooked, washed and scrubbed the floor
for Mr. Smith, the bachelor,
No thanks for low-paid work was proved a myth;
Miss Adams is now Mrs. Smith.

As a result of this happy marriage
   - A. GNP increases because Mr. Smith's disposable income has increased by the amount of the salary which previously he had to pay to Miss Adams.
   - B. GNP decreases because now the cooking, washing, and floor-scrubbing services rendered by Mrs. Smith are no longer counted as market transactions.
   - C. There is no effect whatsoever on GNP because the GNP accountants are not interested in Miss Adam's and Mr. Smith's private affairs: GNP accounts deal only with aggregates.
   - D. The only effect will be to raise Personal Savings because Mr. Smith now saves the salary which previously he had to pay to Miss Adams.

Term		*Spring '72*	*Fall '72*
R with total test score		.30	.32
Percent distribution of responses:	A.	3	2
	B.	71	74
	C.	18	15
	D.	8	9

9. An economy is represented by the model shown below where Y = NNP, C = Personal Consumption Expenditures, and I = Net Investment Spending. (There is no government sector, and money wage rates and interest rates are assumed to remain constant.)

$$Y = C + I$$

$$C = 10 + .8Y \text{ (or } C = 10 + 4/5Y)$$
$$I = 50$$

If investment in this economy were to rise above 50 next near, the increase in NNP that would result would be

A. about equal to the change in investment.
B. about one-fifth of the change in investment.
C. about four-fifths of the change in investment.
D. about five times the change in investment.

Term		*Fall '74*	*Spring '74*
R with total test score		.45	.49
Percent distribution of responses:	A.	18	19
	B.	11	9
	C.	10	10
	D.	61	62

10. What is one economic difference between increasing federal purchases of goods and services at a time when unemployment is at 8 percent and at a time when unemployment is at 4 percent?

A. At 8 percent unemployment it is more likely that the programs would be possible without a sacrifice of private goods.
B. At 4 percent unemployment it is more likely that the programs would be possible without a sacrifice of private goods.
C. At 8 percent unemployment the programs are most likely to influence prices more than real output.
D. At 4 percent unemployment the programs are most likely to influence real output more than prices.

Term		*Spring '74*	*Spring '75*
R with total test score		.43	.47
Percent distribution of responses:	A.	57	59
	B.	17	15
	C.	16	15
	D.	10	11

11. An economy with a stable-price, full-employment equilibrium output estimated at $800 billion finds itself in this situation: Consumption spending is $500 billion, investment spending is $200 billion, government spending is $200 billion, tax receipts are $220 billion, and the government surplus is $20 billion. An appropriate *fiscal* policy under these circumstances is to

A. eliminate the surplus and balance the budget.
B. do nothing; the government surplus indicates that it is consumers and businessmen who are causing the inflation, and there is nothing fiscal policy can do in this situation.
C. increase the surplus by reducing government expenditures and/or increasing tax receipts.

D. have the Federal Reserve Board increase member bank reserve requirements and reduce the money supply.

Term		*Fall '73*	*Fall '74*
R with total test score		.43	.38
Percent distribution of responses:	A.	15	20
	B.	9	8
	C.	57	53
	D.	18	19

12. An economy with a stable-price, full-employment equilibrium output estimated at $800 billion finds itself in this situation: Consumption spending is $400 billion, investment spending is $150 billion, government spending is $150 billion, tax receipts are $130 billion, and the government deficit is $20 billion. An appropriate *fiscal* policy under these circumstances is to

A. eliminate the deficit and balance the budget.

B. do nothing; the government deficit indicates that expansionary fiscal policy has been tried and won't work in this economy.

C. increase the deficit by increasing government expenditures and/or reducing tax receipts.

D. have the Federal Reserve Board reduce member bank reserve requirements and increase the money supply.

Term		*Fall '74*	*Spring '75*
R with total test score		.42	.49
Percent distribution of responses:	A.	13	16
	B.	7	9
	C.	60	57
	D.	20	18

13. An equilibrium level of NNP is disturbed by a rise of 10 ($10 billion) in net investment (*I*) spending. The level of *I* spending, government spending and tax receipts are not affected by changes in the level of NNP. Money wage rates and interest rates are assumed to remain constant. The MPC is 3/4 and the multiplier is 4. In the new resulting equilibrium level of NNP

A. *I* spending will have risen by 40, consumption spending (*C* spending) not at all.

B. *I* spending will have risen by 40, *C* spending by 30.

C. *I* spending will have risen by 10, *C* spending by 40.

D. *I* spending will have risen by 10, *C* spending by 30.

Term		*Spring '74*	*Spring '75*
R with total test score		.30	.31
Percent distribution of responses:	A.	13	17
	B.	23	20
	C.	27	31
	D.	37	32

14. The economy is in recession and one of the congressional committees is holding a hearing to get ideas about what ought to be done. One of the witnesses—economist Jones—says that Congress ought to cut taxes, while another witness—economist Smith—says Congress ought to keep taxes the same, but authorize increases in government expenditures.

A. These two fellows obviously don't subscribe to the same theory as to how the level of GNP is determined by the level of aggregate demand.
B. If Congress follows Jones' advice the effect on unemployment will be the opposite from the effect of following Smith's advice.
C.. The real difference that divides these two economists is their view of the relative desirability of private expenditures versus government expenditures.
D. Either of these policies would raise employment but Jones' suggestion will raise consumption expenditures while Smith's will not.

Term		*Spring '75*
R with total test score		.33
Percent distribution of		
responses:	A.	2
	B.	14
	C.	75
	D.	19

15. Individuals will generally want to hold larger money balances if
A. income rises and the interest rate falls.
B. income falls and the interest rate rises.
C. the interest rate and income both rise.
D. the interest rate and income both fall.

Term		*Fall '74*	*Spring '75*
R with total test score		.36	.36
Percent distribution of			
responses:	A.	51	47
	B.	19	20
	C.	19	18
	D.	11	15

16. On November 29, 1966, *The New York Times* reported that the interest rate yields on short-term government securities declined sharply as a result of Open Market Operations of the Federal Reserve on Monday, November 28. We might conclude that
A. the Fed was probably selling government bonds in the open market.
B. the Fed was probably buying government bonds in the open market.
C. the Fed had probably increased its credit to the open market.
D. the Fed was trying to carry out a tight money policy.

Term		*Spring '73*	*Spring '74*
R with total test score		.34	.37
Percent distribution of			
responses:	A.	36	36
	B.	56	53
	C.	3	4
	D.	5	7

17. "This year it is estimated that the national debt will be increased by $ [number varies to fit the situation] billion. This increase in the national debt will 'boost the economy' and make the interest rate drop." Is the quotation correct, half-correct, or incorrect? *Why?*

A. Correct, because the government is spending more than it is taxing. The extra money reduces interest rates, thereby stimulating investment and giving the economy a boost through the multiplier.

B. Half-correct, because the increase in the national debt makes the interest rate drop. But instead of giving the economy a boost, the extra debt depresses it on account of the extra burden every citizen must bear.

C. Half-correct, because the government is spending more than it is taxing, giving the economy a boost through the multiplier. But selling new bonds by the Treasury tends to raise interest rates rather than lowering them.

D. Incorrect, because the increased debt raises interest rates, reducing investment and depressing (instead of boosting) the economy via the multiplier.

Term		*Fall '74*	*Spring '75*
R with total test score		.30	.29
Percent distribution of responses:	A.	33	40
	B.	6	8
	C.	49	45
	D.	12	7

18. "Because of rapidly rising national defense expenditures, it is anticipated that Country A will experience a price inflation unless measures are taken to restrict the growth of aggregate private demand. Specifically, the government is considering either (1) increasing personal income tax rates or (2) introducing a very tight monetary policy."

If the government of Country A wishes to minimize the adverse effect of its anti-inflationary policies on economic growth, it should

A. use the tight money policy because it restricts consumption expenditures more than investment.

B. use the personal income tax increase since it restricts consumption expenditures more than investment.

C use either the tight money policy or the personal income tax rate increase since both depress investment equally.

D. use the tight money policy since the tax increase would restrict investment more than it restricts consumption expenditures.

Term		*Fall '71*	*Fall '72*
R with total test score		.31	.39
Percent distribution of responses:	A.	7	6
	B.	60	66
	C.	15	15
	D.	18	13

THE NEXT TWO QUESTIONS (19 and 20) ARE CONCERNED WITH APPROPRIATE POLICIES FOR A GIVEN *HYPOTHETICAL* ECONOMIC SITUATION. ASSUME IN BOTH QUESTIONS THAT THE POLICY GOALS INCLUDE STABLE PRICES, FULL EMPLOYMENT AND RAPID ECONOMIC GROWTH.

19. "The total sum paid to factory workers has gone down 8% in the last year, reflecting a drop in employment. Over 7% of the civilian work force is now unemployed. The cost of living was at a record high last month and is up 3.2% over the past 4 months. Inventory purchases by business have been cut sharply in some lines, mainly hard goods."

Which is the most serious problem faced by economic policy makers suggested in the preceding statement?

A. Public pressures may force policy-makers to attempt to increase employment levels even though unemployment is not a significant problem.

B. Federal Reserve policy-makers may experience strong political pressure to decrease the money supply when they want to increase it.

C. Employers often refuse to cooperate with policy-makers by concurrently lowering the compensation of their workers while raising the prices of their finished products.

D. Commonly used stabilization action designed to curb inflation tends to aggravate an unemployment problem concurrently.

Term		*Spring '73*	*Spring '75*
R with total test score		.39	.32
Percent distribution of responses:	A.	5	5
	B.	10	10
	C.	15	15
	D.	70	70

20. "Unemployment last month was 3.6% of the work force, a slight reduction from the previous month. For the past fifteen months, unemployment has been under 5% of the work force. Consumer prices last month increased by one-tenth of a percent—a total gain of 1% over the level of one year ago. Total production of goods and services is projected to be 5% higher this year than it was in the previous year."

Which of the following policies would be most appropriate?

A. Reliance on existing automatic economic stabilizers.

B. An increase in both personal and corporate income taxes.

C. The introduction of additional corporate tax policies designed to discourage investment.

D. Minimum wage legislation to increase the basic pay and expand the number of workers covered by minimum wages.

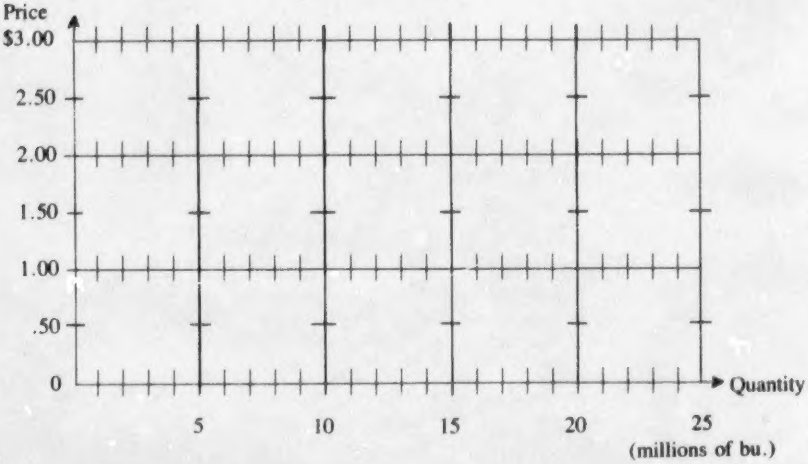
Term		*Spring '72*	*Spring '75*
R with total test score		.31	.14
Percent distribution of responses:	A.	67	71
	B.	16	16
	C.	10	7
	D.	7	6

APPENDIX XII
Homework Problem on Price Elasticity of Demand

PRINT YOUR NAME ______________________________________
(Last) (First)

Below is a table showing the market demand for wheat, other things being constant. Plot these data on the axes provided, and label the demand curve "*D*."

P Price per Bushel	*D* Quantity Demanded (Millions of Bushels)
$3.00	8
2.50	11
2.00	14
1.50	17
1.00	20



If you plotted your demand curve correctly, it slopes "down to the right" indicating that, other things being constant, price and the quantity demanded are inversely related—as price falls, the amount people are willing to buy increases; and as price rises, the amount people are willing to buy decreases. Three reasons that demand curves typically slope "down to the right," others things being constant, are: the "income effect," the "substitution effect," and "the law of diminishing marginal utility." ***Be sure that you understand what these words mean*** by correctly answering the questions on the next page.

1. As used in explaining downward-sloping demand curves, the "income effect" means that, other things being constant,
   - A. as people's incomes rise, they save proportionately more of their income; hence they may actually spend less on most goods.
   - B. a fall in the price of a good has an effect similar to a small increase in people's incomes; hence this may prompt them to buy a little more of that good.
   - C. if the price of a good falls, it is as though the prices of all other goods have risen in relative terms; hence slightly more of this good will be purchased.
   - D. as people's incomes rise, they tend to spend more on goods that do not increase their total satisfaction very much.

2. Which of the alternatives in the above question best describes the "substitution effect" as used in explaining downward-sloping demand curves, other things being constant? A B C D

3. The term "diminishing marginal utility," as used in explaining downward-sloping demand curves, other things being constant, is best described by the fact that
   - A. As you consume more of a good, the total satisfaction you obtain from consuming this good tends to fall.
   - B. A you consume more of a good, the average satisfaction you obtain from each unit of this good tends to fall.
   - C. As you consume more of a good, the extra or additional satisfaction you obtain from each extra or additional unit of this good consumed tends to fall.
   - D. As you consume more of a good, your satisfaction tends to diminish in inverse proportion to the increase in the price of the good consumed.

4. Which of the following quotations is *NOT* an example of the "law of diminishing marginal utility"?
   - A. "There's a limit to how much ice cream you can eat in a day."
   - B. "The second glass tastes just as good as the first."
   - C. "All work and no play makes Jack a dull boy."
   - D. "After a while, even TV gets boring."

The Price Elasticity of Demand refers to moves along a given demand schedule other things being constant. If a price change causes the quantity demanded to change "a lot," we say that demand is "elastic." If a price change causes the quantity demanded to change "a little," we say that demand is "inelastic."

How do you know what is meant by "a lot" and "a little"? The simplest answer is to watch total revenue or total expenditures (they're the same thing) and see which way they move when price changes. If they move with quantity we say demand is "elastic," and if they move with price, we say demand is "inelastic." Note the examples below:

Example 1: If price goes up, the quantity demanded will usually go down, and if total revenue goes down with the quantity demanded we say the quantity demanded changed "a lot"—it pulled revenue down with it—and demand is *elastic* over this interval. On the other hand, if price goes up, the quantity demanded goes down, and total revenue goes up with the price rather than down with the quantity, we say the quantity changed "a little"—not enough to pull revenue with it—and demand is *inelastic* over this interval.

Example 2: If price goes down, the quantity demanded will usually go up, and if total revenue goes up with the quantity demanded we say the quantity demanded changed "a lot"—it pulled revenue up with it—and demand is *elastic* over this interval. On the other hand, if price goes down, the quantity demanded goes up, and total revenue goes down with the price rather than up with the quantity, we say the quantity changed "a little"—not enough to pull revenue with it—and demand is *inelastic* over this interval.

Example 3: If price and quantity demanded change, but total revenue stays the same, we say that demand has unitary price elasticity, or is *unit elastic,* over this interval.

Important point. A single demand curve can have different degrees of elasticity over different intervals. To see this, complete the table below, and then go back to the curve you plotted on the axes above and label the interval between $3.00 and $2.50 "*E*" for elastic since over this interval revenue moves with quantity. Label the interval between $1.50 and $1.00 "*I*" for inelastic since over this interval revenue moves with price. Using the part of the table you have completed, label the interval between $2.50 and $2.00 "________" (*E* or *I*) because over this interval revenue moves with ________________ (quantity/price) and label the interval between $2.00 and $1.50 "________" (*E* or *I*) because over this interval revenue moves with ________________ (quantity/price).

P Price per Bushel	*D* Quantity Demanded (Millions of Bushels)	Total Revenue (Price × Quantity)	Determination of Elas. Between Intervals
$3.00	8	$24 million	
			Revenue moves with *Q*. Demand is *E*
2.50	11	$27.5 million	
			Revenue moves with ____. Demand is ____.
2.00	14	$____ million	
			Revenue moves with ____. Demand is ____.
1.50	17	$25.5 million	
			Revenue moves with *P*. Demand is *I*.
1.00	20	$20 million	

5. The information in preceeding examples indicates that, as one moves to the right along a downward-sloping straight line demand curve,
   A. demand increases.
   B. the quantity demanded falls.
   C. the price elasticity of demand falls.
   D. the price elasticity of demand increases.

Now, dog work over, can you use the concept of price elasticity of demand to throw some light on the following real situations? You don't have to write out answers to Case 4, but you should thoughtfully consider these questions for class discussion.

Case 1: The X Railroad asked the State Commerce Commission for permission to increase commuter rates by 20 percent. The railroad argued that declining revenues made this rate increase essential. Opponents of the rate increase contended that the railroad's revenues would fall because of the rate hike.
Which of the following best interprets the information given?

1. The railroad felt that the demand for passenger service was elastic and the opponents of the rate increase felt it was inelastic.
2. The railroad felt that the demand for passenger service was inelastic and the opponents of the rate increase felt it was elastic.
3. Both groups felt that the demand was inelastic, but for different reasons.
4. Both groups felt that the demand was elastic, but for different reasons.

Case 2: This is based on the following lettered sentences:

A. The football stadium at XYZ University was enlarged three years ago from 30,000 to 35,000 seats.
B. Since the enlargement, the stadium has never been full.
C. Tickets cost five dollars.
D. A marketing survey shows that the University's gate receipts would be lower if it charged lower prices even though the number of tickets sold would be greater.

What, if anything, does sentence D imply about the elasticity of demand with respect to price?

1. Demand is elastic.
2. Demand is inelastic.
3. Demand is at unit elasticity.
4. It implies nothing about elasticity of demand.

Case 3: See the newspaper article on the following page, and write a brief answer to the question on that page in the space below.

E103 HANDOUT
ELASTICITY MAKES PAGE 1, OR HATS OFF TO TINSLEY STEWART, ROBERT KELSO AND THE NEW ALBANY HOME TRANSIT CO.

The Courier-Journal

LOUISVILLE, SATURDAY MORNING, SEPTEMBER 9, 1972

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Bus fare cut lures riders, but not enough

By TINSLEY STEWART
Courier-Journal & Times Staff Writer

Last month Robert A. Kelso cut the Saturday fares on his New Albany bus line from 40 cents to 25 cents in an attempt to lure more passengers.

The experiment failed, and Kelso, a former city attorney, says he's going to have to let some drivers for his Home Transit Co. go and cut back on the hours the buses run.

"When? I don't know," he said earlier this week. "But it's imminent."

During the four August Saturdays the reduced fares were in effect, more people—2,356, an average of 589 per Saturday—did ride the buses. But the income totaled less than when fewer people rode at the higher fares.

On the most profitable Saturday in August, 667 persons paid, at 25 cents each, $166.75.

On July 29, the last Saturday before the experiment started, 551 persons paid, at 40 cents each, $220.40.

The difference—$53.65—represents about $1,500 a month in income for the bus company.

If lowering the fares brings more riders but less money, then, Kelso said, he's not going to lower fares.

What he will do is reduce the number of drivers he has from the current 15 (there were 25 just last year) and operate the buses only in the morning and late afternoon, the periods when they are most heavily used.

Kelso, who says the bus business has been going downhill for years, thinks it is nearing bottom. He said he dislikes the idea of laying off drivers and cutting back on service. But he can't continue to operate at a loss, either, he said.

What does this article say about the price elasticity of demand for Saturday bus service in New Albany, Indiana, during the month of August 1972?

Why?

Case 4: How elastic do you think *your* demand for the following products is, in the price range near the price prevailing now?

Required textbooks
Football tickets to the Purdue game
Lipstick
Blue silk neckties
Gasoline
Airplane tickets home
Dormitory room
Cigarettes
Lighter fluid

In each case, see if you can isolate the major factors that make your elasticity of demand what it is. How much of your income do you spend on this item? Are good substitutes available? How much would your satisfaction change if you had one more unit or one less unit of this item? Can you relate this to the income effect, the substitution effect, and diminishing marginal utility questions you answered above?

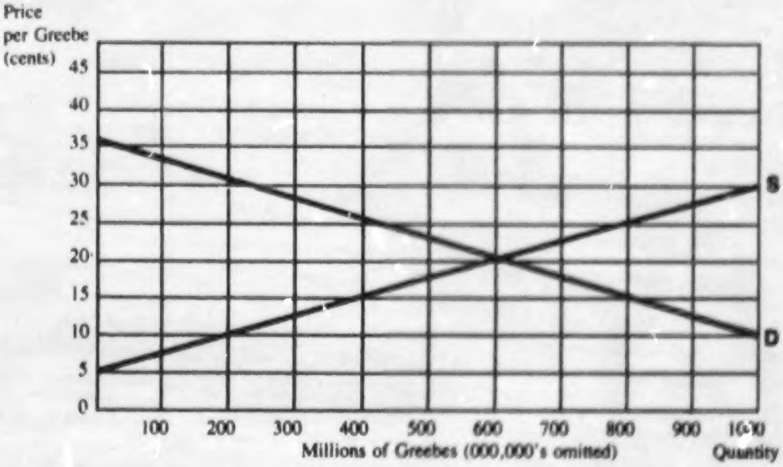
6. Which of the following is likely to be characteristic of a product whose demand is "elastic"?
A. Consumers spend small amounts of their income on it.
B. Good substitutes are not available.
C. Consumers' wants for it are not urgent, and can easily be postponed.
D. All of the above.

7. Which of the following is likely to be characteristic of a product whose demand is "inelastic"?
A. Consumers spend large amounts of their income on it.
B. Good substitutes are available.
C. Consumers' wants for it are urgent, and cannot easily be postponed.
D. None of the above.

APPENDIX XIII
Homework Problem on Excise Taxes

YOUR NAME ______________________________

Here is a graph of the Greebe Market. Study it and answer the questions below.



A

1. On the graph above, the equilibrium quantity of greebes is ______ million.
2. On the graph above, the equilibrium price of greebes is ______ cents per greebe.
3. Consumers are spending a total of $______ million on greebes.
4. Producers are receiving a total of $______ million for selling greebes.
5. Government tax revenue is $______ million.
6. If a tax of 10 cents per greebe sold were levied on the producers of greebes,
   a. the new equilibrium output of greebes would be ______ million.
   b. the new equilibrium price of greebes would be ______ cents per greebe.
   c. consumers are spending a total of $______ million on greebes.
   d. producers are receiving a total of $______ million (after tax) for selling greebes.
   e. the government revenue from this tax is $______ million.
   f. $______ million of this revenue is paid by consumers in the form of higher prices.

g. $______ million of this revenue is paid by producers in the form of reduced income.

h. as a result of the tax, producers may also have an income loss that is not collected by the government or anyone else. This "dead weight loss" is equal to $______ million.

B

If the demand curve in the preceeding illustration were *perfectly inelastic* at a quantity of 600 million greebes, how would your answers to the above questions change? Write in the *new answers* below.

1. On the new graph above, the equilibrium quantity of greebes is ______ million.
2. On the new graph above, the equilibrium price of greebes is ______ cents per greebe.
3. Consumers are spending a total of $______ million on greebes.
4. Producers are receiving a total of $______ million for selling greebes.
5. Government tax revenue is $______ million.
6. If a tax of 10 cents per greebe sold were now levied on the producers of greebes,
   a. the new equilibrium output of greebes would be ______ million.
   b. the new equilibrium price of greebes would be ______ cents per greebe.
   c. consumers are spending a total of $______ million on greebes.
   d. producers are receiving a total of $______ million (after tax) for selling greebes.
   e. the government revenue from this tax is $______ million.
   f. $______ million of this revenue is paid by consumers in the form of higher prices.
   g. $______ million of this revenue is paid by producers in the form of reduced income.
   h. as a result of the tax, producers may also have an income loss that is not collected by the government or anyone else. This "dead weight loss" is equal to $______ million.

C

If the demand curve in the preceeding illustration were *perfectly elastic* at a price of 20 cents per greebe, how would your answers to the first set of questions change? Write in the *new answers* below.

1. On the new graph above, the equilibrium quantity of greebes is ______ million.
2. On the new graph above, the equilibrium price of greebes is ______ cents per greebe.
3. Consumers are spending a total of $______ million on greebes.
4. Producers are receiving a total of $______ million for selling greebes.
5. Government tax revenue is $______ million.
6. If a tax of 10 cents per greebe sold were now levied on the producers of greebes,
   a. the new equilibrium output of greebes would be ______ million.
   b. the new equilibrium price of greebes would be ______ cents per greebe.
   c. consumers are spending a total of $______ million on greebes.
   d. producers are receiving a total of $______ million (after tax) for selling greebes.
   e. the government revenue from this tax is $______ million.
   f. $______ million of this revenue is paid by consumers in the form of higher prices.
   g. $______ million of this revenue is paid by producers in the form of reduced income.
   h. as a result of the tax, producers may also have an income loss that is not collected by the government or anyone else. This "dead weight loss" is equal to $______ million.

D

1. If you were a government revenue agent interested in getting as many tax receipts as possible, would you suggest putting commodity or excise taxes on goods whose demand is (circle one) elastic, unit elastic, inelastic?
2. A famous Supreme Court Justice once said, "the power to tax is the power to destroy." This is more likely to be true if the demand for the product taxed is relatively (circle one) elastic, unit elastic, inelastic.

E

Consider the following newspaper quotation and the questions below. You do not have to write out answers to the questions, but you should thoughtfully consider them for class discussion.

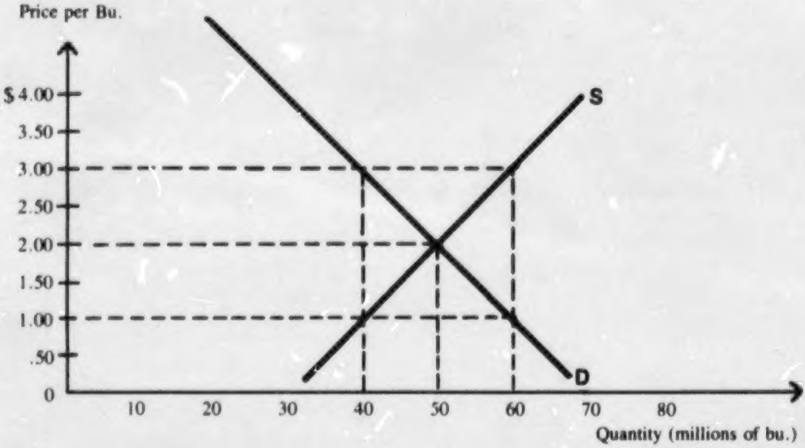
> "The city is planning to place a 10 percent tax on auto parking."
>
> "The tax would fall on every motorist who uses a space in either the garages and the lots operated by the Public Parking Authority, or in privately operated lots and garages."

1. Draw the demand curve and the long-run supply curve for parking lots. Explain why each has the shape you show—i.e., why each is relatively elastic or inelastic.
2. Given the curves you have drawn in (1), show the effect of introducing a 10 percent tax—i.e., how does the equilibrium position after imposition of the tax compare with the initial equilibrium position?
3. The quotation above implies that the burden of the tax will fall entirely upon the driver. Is this true for the case you have developed in (1) and (2) above? Under what circumstances would it be true?

APPENDIX XIV
Homework Problems on Farm Price Supports

PRINT YOUR NAME ______________________________
(Last) (First)

The diagram below represents the supply and demand for an agricultural product. Study the diagram and answer the questions below.



1. Under free market conditions, the equilibrium price would be $____ per bushel, people would buy and consume _____ million bushels, and total farm income would be $_____ million.

Now the government decides to see that farmers receive $3.00 a bushel for this product. Consider the following three different policies for achieving this objective.

2. *Crop Restriction Program*. Suppose the government can get the farmers to reduce the supply (shift the whole supply curve to the left) to the extent that a new market equilibrium price of $3.00 per bushel is established.

Under this program, people would buy and consume _____ million bushels, and total farm income would be $_____ million. Further, if no taxpayers' money was used to "bribe" or persuade farmers to restrict their supply, assume that the total cost of this program to taxpayers would be zero. (Not likely.)

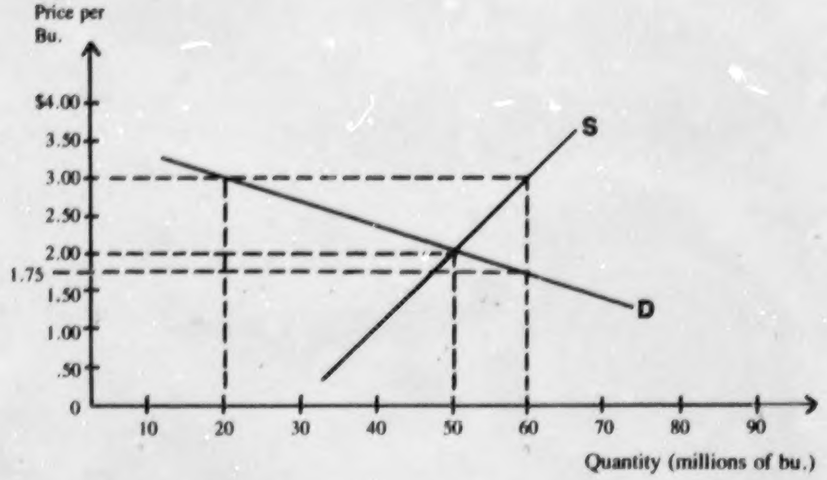
3. *Loan-Storage Program*. Suppose the government tells the farmers it will "lend" them $3.00 a bushel for this product. They can sell as much of their output as they want on the market at $3.00 a bushel, and repay the government in cash; but if they have some output that they can't sell at this price, they can give the wheat to the government in repayment for their loans and the government will store the surplus. (Note: In effect the government is saying: "sell as much as you can at $3.00 a bushel, and we will use

taxpayers' money to buy the rest of your output at the support price of $3.00, and then store the surplus.")

Under this program, people would buy and consume ______ million bushels and they would pay farmers a total of $______ million. Further, the government would buy and store ______ million bushels at a cost to the taxpayer of $______ million (not counting storage cost), and total farm income would be $______ million.

4. *Direct Payment Plan.* Suppose the government tells the farmers, "we will guarantee you $3.00 a bushel, but everything you produce at this price must be sold on the open market for whatever it will bring, then we will give you, at taxpayers' expense, the difference between the free market price and $3.00 a bushel."

   Under this program, people would buy and consume ______ million bushels and they would pay farmers a total of $______ million. Further, the government would use taxpayers' money to pay the farmers another $______ million, and total farm income would be $______ million.
5. If your goal was minimum cost to taxpayers (ignoring storage cost or "bribes" to get crop restriction), which of these programs would you favor? Why?
6. If your goal was maximum food consumption by the people, which of these programs would you favor? Why?
7. If your goals were maximum income to farmers with a minimum of enforcement and administrative costs, which of these programs would you favor? Why?
8. Would your answers to the above-mentioned questions differ if the demand curve for this product was much more elastic than the one shown on the graph above? Why? (To help you to answer this question look at the demand and supply curve below. *Note* the scales are the same and the supply curve is the same on both graphs.)

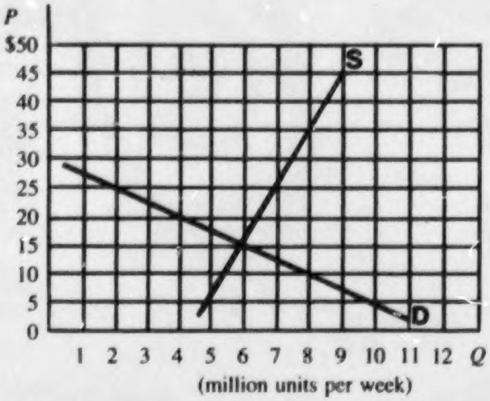


9. Do you think that the demand curve for most agricultural products is relatively elastic or relatively inelastic? Why?

APPENDIX XV
Homework Problem on Medical Care*

PRINT YOUR NAME ______________________________________
(Last) (First)

Suppose the following graph shows supply and demand for medical services in the U.S. (The "units" in which the quantity of medical services is measured are a package consisting of a visit to the doctor, a lab test, a day in the hospital, and a bottle of pink pills. The price axis, as usual, shows the price per one of these units.)



Demand schedule in table form

Q	P	New P after subsidy
2	$25	________
4	20	________
6	15	________
8	10	________
10	5	________

1. With this *S* and *D* the price per unit will be $______ and the amount of medical care people will be getting will be ______ million units. The amount they spend for medical care will be $______ million.

   Suppose we consider this situation quite unsatisfactory, since that quantity means a lot of people aren't getting the medical care they need, and the explanation is they can't afford to pay that kind of money. There is enough support for the government to set up a subsidy program to make medical care cheaper so that these people can afford the care they need. The scheme when passed works as follows: The government will reimburse the patient for half of any medical bill he incurs.

2. Draw in the new demand curve resulting from the subsidy. In deciding where to draw it in, reason as follows: If before the subsidy, people bought 2 million units when the price was $25, they ought now to be willing to buy that same quantity at a price of $50, since the government will pay $25 of the $50, and the cost to the patient is still $25. In the table above work out the whole column of new prices that go with the old quantities and plot the new demand curve.
3. The new price is $______ per unit, the amount of health care people are now getting is ______ million units, the total amount now spent for medical care is $______ million, of which the amount the patients pay is $______ million, and the amount the taxpayers pay through the government is $______ million.
4. On the bottom of this page, briefly, and in your best prose style, discuss whether this subsidy has been a success in achieving what we wanted. Think about things like how much more health care people are getting, whether patients are paying more or less than before, how much it is costing the taxpayer, where that money is going. Explain carefully what elasticity may have to do with these results. Is there any reason to think that the situation in the real world might indeed be like this? What does this suggest as a possible alternative way of getting more health care produced?

APPENDIX XVI

Homework Problems on Aggregate Economic Models

You are given the following equations, or behavioral postulates, which accurately describe several model economies:

MODELS:	I	II	III	IV	V
C = Personal Consumption Outlays	$50 + \frac{9}{10} Y_d$	$50 + \frac{9}{10} Y_d$	$50 + \frac{9}{10} Y_d$	$50 + \frac{9}{10} Y_d$	$50 + \frac{9}{10} Y_d$
I = Net Investment	10	10	90	$32 + \frac{2}{10} Y - 10r$	$32 + \frac{2}{10} Y - 10r$
G = Govt. Purchases of Goods and Services	0	100	100	100	$40 + \frac{1}{10} Y$
S_c = Net Corporate Savings	0	30	30	30	$\frac{1}{10} Y - 10$
T = All Taxes	0	100	$\frac{1}{3} Y$	$\frac{1}{3} Y$	$\frac{3}{10} Y$
T_r = Government Transfer Payments	0	30	30	30	$65 - \frac{1}{10} Y$

r = Relevant Rate of Interest (at this time 20 percent or .20 in all model economies)

Y = Equilibrium NNP, which is the result of the interaction of the behavioral postulates above. You must solve for Y, knowing $Y = C + I + G$

Y_d = Personal Disposable Income, which is related to NNP as $Y - T - S_c + T_r$

Note in Model I, $Y_d = Y - 0 - 0 + 0 = Y$

Model II, $Y_d = Y - 100 - 30 + 30 = Y - 100$

Model III, $Y_d = Y - \frac{1}{3}Y - 30 + 30 = Y - \frac{1}{3}Y = \frac{2}{3}Y$

Model IV, $Y_d = Y - \frac{1}{3}Y - 30 + 30 = Y - \frac{1}{3}Y = \frac{2}{3}Y$

Model V,

$$\begin{aligned} Y_d &= Y - \frac{3}{10}Y - (\frac{1}{10}Y - 10) + (65 - \frac{1}{10}Y) \\ &= Y - \frac{3}{10}Y - \frac{1}{10}Y + 10 + 65 - \frac{1}{10}Y \\ &= Y - \frac{5}{10}Y + 75 \\ &= \frac{5}{10}Y + 75 \end{aligned}$$

E 104
Homework Problem 7

PRINT YOUR NAME ______________________________
(last) (first)

1. Tabular solution for Model I (fill in all the blanks):

Total Output (NNP)					Total Demand
Y	Y_d	C	I	G	$C + I + G$
300	300	320	—	0	330
600	600	—	10	0	—
900	900	—	10	0	—
1200	1200	1130	—	0	1140

Equilibrium NNP (Y) for Model I is __________ because:

2. Algebraic solution for Model I (show your work):

Know: $Y = C + I + G$ and $Y_d = Y - T - S_r + T_r = Y - 0 - 0 + 0 = Y$

So: $Y = 50 + 9/10Y_d + 10$
$Y = 50 + 9/10Y + 10$
$Y = 60 + 9/10Y$

3. Show how you calculate the multiplier for Model I.

4. If you wanted the equilibrium value of NNP to move to 800 in Model I, it would be necessary to change autonomous spending (the constant in the equation $Y = 60 + 9/10Y$) by ______________________________.

5. If you wanted the equilibrium value of NNP (Y) to move to 400 in Model I, it would be necessary to change autonomous spending (the constant in the equation $Y = 60 + 9/10Y$) by ______________________________.

E 104
Homework Problem 8 (Part A)

PRINT YOUR NAME ____
(last) (first)

Tabular Solution for Model III
(Fill in *all* the blanks)

Total Output (NNP)					Total Demand
Y	Y_d	C	I	G	$C + I + G$
300	200	230	90	100	420
600	400	—	—	—	—
900	—	590	—	—	—
1200	800	770	90	100	960

Tabular Solution for Model IV
(Fill in *all* the blanks)

Total Output (NNP)					Total Demand
Y	Y_d	C	I	G	$C + I + G$
300	200	230	90	100	420
600	400	—	—	—	—
900	—	590	—	—	—
1200	800	770	270	100	1140

Equilibrium NNP (Y) for Model III is __________ because

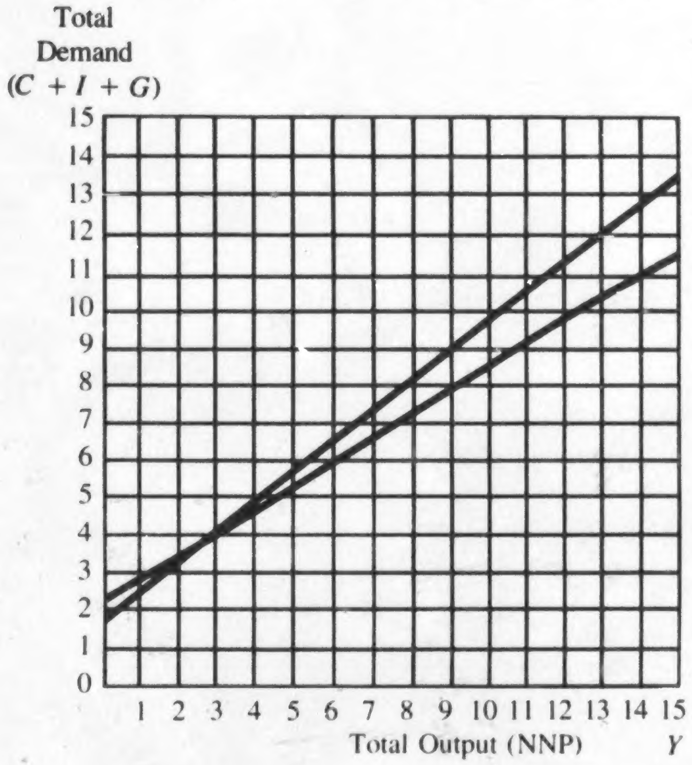
Equilibrium NNP (Y) for Model IV is __________ because

E104
(Dr. Saunders)

Homework Problem 8 (Part B)

PRINT YOUR NAME ____
(Last) (First)

Graphical Solutions for Models III and IV
(Hundreds (00's) omitted on vertical and horizontal scales)



CORRECTLY LABEL THE TOTAL DEMAND CURVES ABOVE III AND IV

Equilibrium NNP (Y) for Model III is ____________, because

Equilibrium NNP (Y) for Model IV is ____________, because

E 104
Homework Problem 8 (Part C)

PRINT YOUR NAME ______________________________
(last) (first)

Algebraic solution for Model III (show your work):

Know: $Y = C + I + G$ and $Y_d = Y - T - S_b + T_r$

So: $Y = 50 + 9/10\,Y_d + 90 + 100$

$Y =$

Algebraic solution for Model IV (show your work)

Know: $Y = C + I + G$ and $Y_d = Y - T - S_b + T_r$

So: $Y = 50 + 9/10\,Y_d + 32 + 2/10Y - 10r + 100$

$Y =$

E 104
Homework Problem 8 (Part D)

PRINT YOUR NAME ______________________________________
(last) (first)

1. Show how you calculate the multiplier for Model III.

2. If you wanted the equilibrium value of NNP (*Y*) to move to 800 in Model III, it would be necessary to change autonomous spending by ____________. Change any constant in Model III by this amount, and show how this results in a new equilibrium of 800 in the space below.

Present Model III: $Y = 50 + 3/5Y + 90 + 100$
$Y = 240 + 3/5Y$
Change to: $Y = \underline{\quad} + 3/5Y$
and solve for new equilibrium:

3. Show how you calculate the multiplier for Model IV.

4. If you wanted the equilibrium value of NNP (*Y*) to move to 800 in Model IV, it would be necessary to change autonomous spending by ____________. Change any constant in Model IV by this amount, and show how this results in a new equilibrium of 800 in the space below.

Present Model IV: $Y = 50 + 3/5Y + 30 + 1/5Y + 100$
$Y = 180 + 4/5Y$
Change to: $Y = \underline{\quad} + 4/5Y$
and solve for new equilibrium:

REVIEW QUIZ ON "SOME MODELS I WOULD LIKE TO KNOW"

(Phone Numbers on Request)

Put your name here and at
the top of pages 2 and 3 ______________________________
(Last) (First)

Each question is worth 30 points. Where an explanation is asked for, think before you write, and make it as *brief* as possible. No B.S. please, my models (and graders) are very adversely affected by meaningless verbage.

1. Study the following table carefully:

NNP *Y*	Consumption *C*	Investment *I*	Government Spending *G*
200	100	50	200
400	200	100	200
600	300	150	200
800	400	200	200
1000	500	250	200
1200	600	300	200

a. What is the equilibrium value of NNP in this economy? ____________. How did you figure this out?

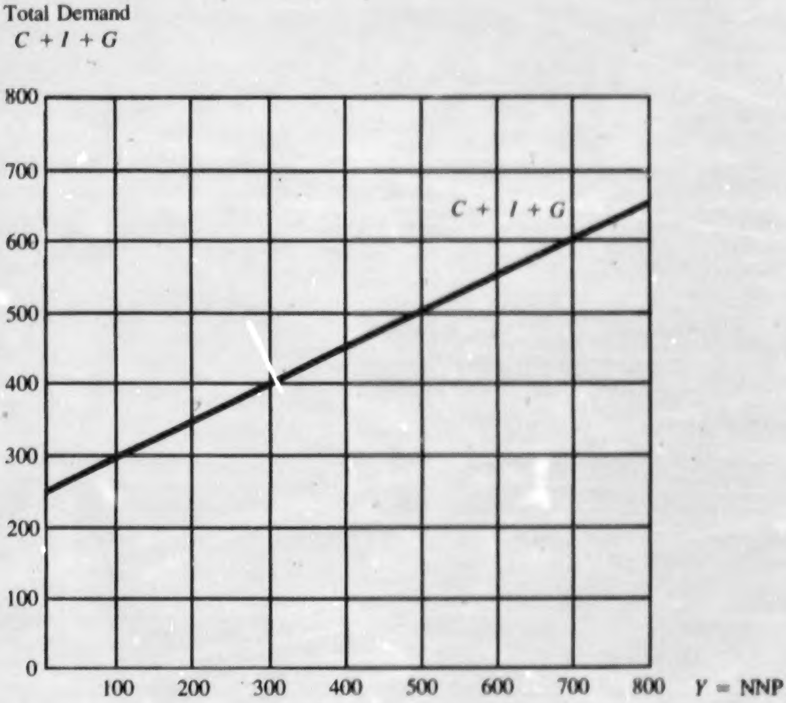
b. What is the numerical value of the multiplier in this economy? ____________. How did you figure this out?

c. If you wanted to get the equilibrium value of NNP in this economy to 900 billion, how much would you have to change autonomous spending? ____________.

Name ____

(Last) (First)

2. Study the following graph carefully:



a. What is the equilibrium value of NNP in this economy? ______________. How did you figure this out?

b. What is the numerical value of the multiplier in this economy? ______________. How did you figure this out?

c. If you wanted to get the equilibrium value of NNP in this economy to 300 billion, how much would you have to change autonomous spending? ______________.

Name ____
(Last) (First)

3. Note the following equations which accurately describe a model economy:
Disposable Income (Y_d) is related to NNP (Y) by the equation $Y_d = 3/4Y$
Consumption (C) is related to Disposable Income (Y_d) by the equation
$$C = 50 + 2/3Y_d$$
Investment Spending (I) is described by the equation $I = 5 + 1/8Y$
Government Spending (G) is described by the equation $G = 20 + 1/8Y$
Solve these equations for an equilibrium value of NNP by using the basic identity:
$$Y = C + I + G$$

a. The equilibrium value of NNP in this economy is ____________. (Show your work below.)

b. What is the numerical value of the multiplier in this economy? ____________. How did you figure this out?

c. If a widespread consumer boycott on the part of a large group of political activists autonomously reduced consumption spending by 10 billion dollars at all levels of NNP (i.e., the consumption function changed to $40 + 2/3\ Y_d$), and nothing else happened, what would be the new equilibrium value of NNP in this economy? ____________.

APPENDIX XVII
Homework Problem on Fiscal Policy

In Model II, given to you previously, but not yet discussed in class:

Consumption (C) is partly autonomous and partly induced, it is related to NNP (Y) by the equation $C = 50 + 9/10\,(Y - 100)$; Investment (I) is autonomous, $I = 90$; and Government spending on goods and services is autonomous, $G = 100$. Let's also say that the national debt is 500.

The equilibrium value of NNP (Y) in this economy is:

$$\begin{aligned} Y &= 50 + 9/10\,(Y - 100) + 90 + 100 \\ Y &= 240 + 9/10\,(Y - 100) \\ 10Y &= 2400 + 9Y - 900 \\ 10Y &= 1500 + 9Y \\ Y &= 1500 \end{aligned}$$

At this level of NNP: C is 1310, I is 90, and G is 100. The private sector ($C + I$) totals 1400 of the 1500, the public sector (G) totals 100 of the 1500, and consumer savings are 90 $[-50 + 1/10\,(Y - 100) = -50 + 1/10\,(1400) = -50 + 140 = 90]$.

The basic multiplier is $\frac{1}{1-9/10} = \frac{1}{1/10} = \frac{10}{1} = 10$

Case A: Now, let's say this 1500 level of NNP is not high enough fully to employ the labor force available and looking for work, and it is decided to use fiscal policy to move the equilibrium value of NNP up to a full-employment level NNP of 1590. It is noted that this level of NNP can be reached by:

1. cutting taxes (T), and leaving G at 100,
2. increasing G, and leaving taxes (T) at 100,
3. increasing government spending and increasing taxes by the same amount ($\Delta G = \Delta T$) so that the national debt is not changed.

Questions:

Using alternative 1 how much would T have to be cut to get equilibrium Y to 1590? ________ from 100 to ________.

If this was done, C would be ________ out of 1590, I would be ________ out of 1590, G would be ________ out of 1590, the national debt would increase by ________ from 500 to ________, and consumer savings would increase by ________ from 90 to ________.

Using alternative 2, how much would G have to be increased to get equilibrium Y to 1590? ________ from 100 to ________.

If this was done, C would be ________ out of 1590, I would be ________ out of 1590, G would be ________ out of 1590, the national debt would increase by ________ from 500 to ________, and consumer savings would increase by ________ from 90 to ________.

Using alternative 3, how much would G and T have to be increased ($\Delta G = \Delta T$) to get equilibrium Y to 1590? ________ from 100 to ________.

If this was done, C would be ________ out of 1590, I would be ________ out of 1590, G would be ________ out of 1590, the national debt would be unchanged at 500, and consumer savings would be unchanged at 90.

Study these results carefully and *complete the answers on the attached answer sheet*

Case B: Using the same initial model as before, let's now say that the 1500 level of NNP is too high to maintain stable prices; at this level there is too much inflation in the economy and it is decided to use fiscal policy to move the equilibrium value of NNP down to a stable price level NNP of 1410. It is noted that this level of NNP can be reached by:

1. increasing taxes (*T*), and leaving *G* at 100
2. reducing *G*, and leaving *T* at 100
3. reducing government spending and reducing taxes by the same amount ($\Delta G = \Delta T$) so that the national debt is not changed.

Questions:

Using alternative 1, how much would *T* have to increase to get equilibrium *Y* to 1410? ________ from 100 to ________.

If this was done, *C* would be ________ out of 1410, *I* would be ________ out of 1410, *G* would be ________ out of 1410, the national debt would decrease by ________ from 500 to ________; and consumer savings would decrease by ________ from 90 to ________.

Using alternative 2, how much would *G* have to be decreased to get equilibrium *Y* to 1410? ________ from 100 to ________.

If this was done, *C* would be ________ out of 1410, *I* would be ________ out of 1410, the national debt would decrease by ________ from 500 to ________, and consumer savings would decrease by ________ from 90 to ________.

Using alternative 3, how much would *G* and *T* have to be decreased ($\Delta G = \Delta T$) to get equilibrium *Y* to 1410? ________ from 100 to ________.

If this was done, *C* would be ________ out of 1410, *I* would be ________ out of 1410, *G* would be ________ out of 1410, the national debt would be unchanged at 500, and consumer savings would be unchanged at 90.

Study these results carefully and *complete the answers on the attached answer sheet*.

PRINT YOUR NAME ______________________________

(Last) (First)

In Case A:

Which alternative increased the private sector ($C + I$) relative to the public sector (G) the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Which alternative increased the public sector (G) relative to the private sector ($C + I$) the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Which alternative increased the national debt the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Which alternative increased consumer savings the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

In Case B:

Which alternative decreased the private sector ($C + I$) relative to the public sector (G) the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Which alternative reduced the public sector (G) relative to the private sector ($C + I$) the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Which alternative decreased the national debt the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Which alternative decreased consumer savings the most? (Circle one)

Alternative 1, Alternative 2, Alternative 3

Explain in your own words why, dollar for dollar, autonomous tax changes have a smaller effect on equilibrium NNP than autonomous changes in government spending of the same amount.

For another approach to teaching the college introductory economics course in this series see also . . .

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